`

A CRITICAL LEGAL ANALYSIS OF THE LAW, PRINCIPLES AND PRACTICE OF TRANSBOUNDARY WATER LAW IN SOUTHERN AFRICA: THE CASE OF OKAVANGO RIVER BASIN

THESIS

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Abstract

The exponential rise in global population and its growing resource needs has led to an inevitable geometric rise in demand for water. At the centre of this growing demand is how nations relate to each other in the management of trans-boundary water resources. In analysing state relations in so far as transboundary water management and allocation is concerned, the central concept of equity becomes very important to consider.

This dissertation is based on research on the Okavango River Basin, but also considers international law and other relevant comparative jurisdictions and river basins in Southern Africa and elsewhere. In order to answer the research questions, the literature that is applicable to the other river basins is extensively analysed.

The research questions for this study moved from the general to the particular and were centred on the definition of equity and equitable water allocation. Also, the study considered the questions as to whether the inclusion of equitable language in transboundary water management and allocation agreements really makes a practical difference in transboundary water law at the basin level and in this light, whether the signing of the water agreements on the use and management of Okavango waters has led to conflict or cooperation. The concluding question focused on how the regime theory can help in understanding of interstate water co-operation and whether based on this understanding, a typology or model for Okavango River Basin can be constructed.

The dissertation records some findings which include that the inclusion of equitable language does not in itself connote lack of conflict or cooperation. Further, the signing of water agreements on the use and management of Okavango waters has not been the sole cause of the apparent cooperation. The cooperation that exists is mainly out of political will or based on expectation of some economic benefit. It is emphasised in the dissertation that differences of opinion between the watercourse states are based not only on their legal views, but also on their material political and economic interests. The dissertation highlights many instances which show conflict.

This study was mainly desk-based and followed a mixed methodological approach. The analysis of data was based on some inductive strategy. The result of these methodologies and research paradigms was the development of a Five Pillar model out of the understanding from the regime theory. Based on this model, two Model Agreements applicable to the Okavango River basin were drafted and attached to the Dissertation as Annexes.

Dedication

This PhD is dedicated to

My Parents

The Late father, Samuel Kozanayi Mapaure (+86) and My Mother Mary Thonje (73)

[53 years of solid marriage between them]

For they toiled day and night to raise me with all love and instil in me the moral and intellectual fibre I possess. Had it not been their love, perseverance, and desire to see me alive and educated, I wouldn't have been inspired to do a PhD.

And to

Professor Manfred O. Hinz

[ten years of mentoring me]

As a token of esteem for his unwavering love and support. Had I not met him, I doubt whether this First PhD in the Faculty of Law of the University of Namibia would have existed at all.

Supervisors' Certificates

Main supervisor

I, John Baloro, certify that the research and writing of this PhD Dissertation was carried out under my supervision.

_____ _____

Professor John Baloro Date

…….

Co- supervisor

I, Professor Manfred O. Hinz, hereby certify that the research and writing of this PhD Dissertation was carried out under my supervision.

_____ _____

Professor Manfred O. Hinz Date

Declarations

I, the undersigned, hereby declare that the work contained in this Dissertation for purposes of obtaining my degree of Doctor of Philosophy (PhD) in Law, is my own original work and that I have not used any other sources other than those listed in the bibliography and/or quoted in the references.

…….

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Clever Mapaure **Date**

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My gratitude goes, also, to Professor Werner Menski who with immense attention supervised and facilitated my successful research in London during November 2011 when I did my research at the University of London School of Oriental and African studies. I am also deeply indebted to veteran journalist and editor Moses Magadza for language-editing this thesis while also working on his PhD thesis. Lastly, I thank my parents (my father passed on when I was in my final year) to whom this thesis is dedicated for their

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Chapter 1

General Introduction and Background to the Study

1.1 Introduction

The exponential rise in global population and its growing resource needs have led to an inevitable geometric rise in demand for water. Water appears to be the *new oil* and discussions on the scarcity of water have led to conclusions that the next world war will be about water. Recognisably, there is considerable talk of *water wars*, but in fact there is little evidence of international violent conflict over water.[1] In this context international conventions have been concluded and states have entered into regional and international agreements with each other to avoid conflict over water resources between or among themselves. Central to this discourse is the analysis of the interaction of nations regarding the management and allocation of international water courses. Such analysis brings into picture the dynamics of legal and political dynamics of international water relations which form part of the central concepts analysed in this dissertation.

[1] Ravnborg, HM. 2004. *Water and Conflict– Lessons Learned and Options Available On Conflict Prevention and Resolution in Water Governance.* DIIS Brief. Copenhagen: Dansk Institut for Internationale Studier.

Cross boundary rivers such as the Okavango River are considered as a regional link amongst the river line countries. For millennia, transboundary rivers such as the Okavango represent a unique waterway nourishing varied livelihoods, an array of ecosystems and a rich diversity of cultures. It is thus important that in the ultilisation of water resources within the basin, principles of transboundary water equity are applied. However, whether they are applied or not, the question still remains whether there will be conflict or cooperation, hence this study is imperative.

Potential conflict or cooperation potential over internationally shared watercourses is an issue which cannot be ignored and has to be objectively looked at. In this context, it should be noted that for cooperation or conflict to be objectively looked at, there is need for a clear understanding of water demand in the world or nations under study. Further, it should be noted that water demand is met by the availability of both portable and non-portable water. Therefore, water demand cannot be defined by a mere consideration of the amount required by the supply distribution from the treatment works to the amount of water required by the customer because consumer demands are generally over the supply rates. This analysis leads to the understanding of equity in transboundary water management and utilisation.

Connected to the above, is the fact that while new technological innovations improve the world's societies' abilities to meet the new demands on water resources, it also plays an important role in increasing the demand for water for production and creates new and

additional problems for people and for the environment such as river and sea pollution. At the centre of this growing demand is how nations relate to each other in the management of trans-boundary water resources, be they underground or surface waters.

Factually, it is evident that in many parts of the world and on many occasions, the need for fresh, unpolluted water and actions of states over shared river courses have caused disputes. Historian Robert Collins summarized this reality in a comment on the rivalries in the Nile basin: '[M]an will always need water; and in the end this may drive him to drink with his enemies.'[2] In many of these disputes, the watercourse states involved reached a settlement either by negotiation or, exceptionally, by international adjudication, where decisions were based on equity and justice, aiming at an optimum and sustainable utilisation of the water. Differences of opinion between the watercourse states rely not only on their legal views but also on their material political and economic interests. It is this conflict or cooperation based on the politico-legal dichotomy which forms the crux of this study.

The Agreement creating the Permanent Okavango River Basin Water Commission (OKACOM) aims at achieving equitable utilisation of waters within the Okavango River Basin thus fostering a climate of cooperation as opposed to conflict. Whereas this is

[2] Collins, R. 1990. *The Waters of the Nile: Hydropolitics and the Jonglei Canal, 1900-1988.* Oxford: Oxford University Press, p.300

laudable, technical problems surface the moment the term “equitable” is mentioned and semantics complicates understanding of legal and political documents. It is generally understood that equitable utilisation of the waters within the Okavango River Basin requires Angola, Namibia and Botswana to use water in such ‘a way’ as not to injure unreasonably the other riparian states. In this light, some might argue that “equitable” sharing must mean equal sharing but the term “a way” is not clear. A simple perusal of the standards for equitable utilisation where they appear in international agreements on transboundary waters demonstrates that while access is guaranteed, equal shares are not. Thus even if each interested state always agrees to the rule of equitable utilisation, states would still dispute what should be the common standard for sharing and the proper application of the agreed standard.

In Africa, about 60% of the continent is covered by transboundary river basins. A third of the African population lives in an underwater scarcity situation, and half of the African countries will suffer from water stress by the year 2025.[3] Shared water utilisation plays and will play a significant role in inter-state relations. Moreover, population growth and

[3] Ahmed, AA. and Eldaw, AK. 2002. “Challenges and Future Opportunities in the Nile Basin”, in Castelein, S. (Ed) 2002. *From Conflict to Co-operation in International Water Resources Management: Challenges and Opportunities* UNESCO-IHE Institute for Water Education Delft, the Netherlands, pp. 49-58.

the onslaught of recurrent drought and famine in some parts of Africa would intensify demand for fresh water.

The rule of equitable utilisation in the context of transboundary water resources is simply too general and too vague to be applied without the interested states filling in the details in what remains merely an obligation of fairness. Non-lawyers, particularly engineers and hydrologists, sometimes see in the list of factors for determining equitable utilisation, a poorly stated equation. By this view, if one simply fills in numerical values for each factor, one could somehow calculate each watercourse state's share of the water without reference to political or other non-quantitative variables. This ignores that the Helinski Rules on the Uses of the Waters of International Rivers, 1966 (the Helinski Rules) and the UN Convention on the Law of Non-Navigational Uses of International Watercourses, 1997 (the Watercourses Convention) are legal documents that ultimately are addressed to judges. Judges make judgments, and in the English language, at least, the word judgment carries a connotation that the result is not dictated in any immediate sense by the factual and other inputs that the judge relies upon in exercising judgment. Any attempt to treat the list of relevant factors as an algorithm misses the point entirely. This then prompts an investigation into the law, principles and practice of transboundary water equity in the unexplored Okavango River Basin.

1.2. Orientation of study

This study focused on the law, principles and practice of transboundary water equity in southern Africa with the Kavango River Basin as a case study. The concept of equity was central as it had emerged as an important principle in transboundary water law in recent years, particularly in relation to water allocation. Yet basic questions remained unanswered. What constitutes an equitable transboundary water agreement and what constitutes an equitable allocation of shared waters? This study started from these minute but very important considerations and interrogated bigger issues regarding whether the inclusion of equitable language really made a difference in transboundary water law at the basin level.

On the backdrop of the above generic exposé, the research focused on the Okavango River Basin as a case study to critically assess past efforts to integrate equity into transboundary water law. The qualitative characteristics of agreements claiming to consider equity were critically analysed from a legal perspective and compared to the practice on the ground to reveal what differences, if any, existed. While the study was limited to the Kavango River Basin, it did not ignore that the equity concepts behind the 1966 Helsinki Rules and the 1997 United Nations Convention on Non-Navigational Uses of International Watercourses had impacted on basin level agreements across the world including the area of study.

Enshrined in the 1966 Helsinki Rules on the Uses of the Waters of International Rivers (1966 Helsinki Rules) and the United Nation's 1997 Convention on the Non-Navigational Uses of International Watercourses (IWC), equity is now one of the most frequently applied concepts in transboundary water agreements, particularly as it relates to water allocation. This envisaged equitable water allocation is however achieved through the inclusion of language that mentions equity and also through institutional arrangements in various countries that share the Kavango River.

This study thus also considered the institutional arrangements in Angola, Namibia and Botswana and pointed out major problems while analysing how they impacted on the law and practice of equitable water management and allocation. These major institutional problems which Southern African countries including Angola Namibia and Botswana meet in international water management could be summarised as follows:

(a) Lack of coordination and clear definition of authority and roles between State and traditional structures of government;
(b) A lack of community involvement in the projects, from grass root project planning to their execution;
(c) An insufficient mechanism for consultation among stockholders;
(d) A lack of clearly defined objectives and suitable regional strategies based on clear shared vision or master plan acceptable among riparian Countries for the development of the basin;

(e) A lack of legal and institutional mechanism for benefit sharing for the prevention and management of water related conflicts;

(f) An inadequate framework for defining institutional objectives and policies;

(g) Inadequate institutional and operational capacities for planning design and execution of projects;

(h) A weak institutional capacity and vision for planning and co-coordinating the implemented action;

(i) The non-co-operation between riparians or member countries;

(j) A lack of adequate knowledge of national policy, activities and orientation of water resources project at national level and

(k) A lack of co-operation and adequate consultation between institutions, intergovernmental organizations and donor agencies.

The weaknesses in regard to the substantive laws were highlighted through the analysis of the relevant laws binding the three states. Considering the inherent institutional problems as highlighted above, the study looked at what was needed for sustainable water allocation to be done in the Kavango River basin. The study thus considered that indeed effective water resources management is complex and requires many skills which may include a network of competent institutions and significant analytical capacity, a long term or holistic vision in planning for water management, the prioritisation, planning and technology selection and respect of traditional systems and structures of governance and their traditional knowledge regarding natural resource including water management.

In general terms, therefore, the focus of the study as evidenced by the research questions below was to assess conflict or cooperation or potential for either in the use and or management of international river courses, specifically the Okavango given existing international water conventions and bilateral or multilateral treaties. This was done on the understanding that freshwater is absolutely essential for sustaining human livelihood and also central to agriculture and industry. Sound management of transboundary waters is thus crucial to handle the pressure on the resource due to increased water consumption. This explains why previous studies as shown in the literature review below have found a robust relationship between shared rivers and interstate conflict or cooperation.[4]

This study also focuses on water governance. Governance has become a key consideration in international literature on water control and development. For example, The United Nations' 2003 World Water Development Report states that the water crisis is mainly a crisis of governance. The 1992 Dublin-Rio Statement acknowledges that water is massive in volume but "finite" in nature. Attached to governance issues is the concept of equity in the distribution of or access to common pool resources such as water and rights allocation for same. This reflects on the problems stated immediately below.

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[4] Gleditsch, NP., Kathryn, F., Håvard, H., Bethany, L., and Taylor, O., 2006. 'Conflicts over Shared Rivers: Resource Scarcity or Fuzzy Boundaries?', *Political Geography.* 2006. 25(4): 361–382

1.3 Statement of the problem

Theorisation abounds in national and international natural resource law and international water law is no exception. Neo-Malthusians have regularly predicted water wars.[5] The Neo-Malthusian approach to conflict is rooted in Thomas Malthus' argument[6] that the geometric progression of population growth and the linear growth in food production would at some point inevitably produce a food crisis.[7] Among the consequences of this

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[5] Brochmann, M. and Gleditsch NP. 2006. 'Conflicts in International River Basins: Contiguity or Asymmetry?' Paper presented at a meeting in CSCW Working Group 3, Environmental Factors in Civil War. PRIO, Oslo, 21 September 2006. Available at www.prio.no/upload/cscw/wg3/.../Rivers_confl_notc_final.doc. Last Accessed 12 April 2010.

[6] Malthus, T. 1798. An Essay on the Principle of Population. London: Available at http://www.edstephan.org/malthus/malthus.0.html. Last accessed 14 April 2009

[7] *Ibid*. The foundation of Malthus' theory rests on two assumptions that he views as fixed, namely that food and passion between sexes are both essential for human's existence. Malthus believed that the world's population tends to increase at a faster rate than its food supply. Whereas population grows at a geometric rate, the production capacity only grows arithmetically. Therefore, in the absence of consistent checks on population growth, Malthus made the gloomy prediction that in a short period, scarce resources would have to be shared among an increasing number of individuals. See

crisis were “famine, pestilence, and war”. Ehrlich[8] or Meadows et al[9] generally do not subscribe to such a simple formula, but they see a broad range of scarcities emerging. These scholars say that non-renewable resources are being depleted and renewable resources are exploited beyond their capacity for renewal. The problem also exists in regard to the perceptions which people have about water. As Malla says:

> Depending on one’s perspective, the earth’s fresh water is either a *necessity of life*, one of many in the biosphere, equal in importance to air, carbon and sunlight; or it is a *vital natural resource* that is rapidly

---

Abramitzky, R. and Braggion, F. 2011. ‘Malthusian and Neo-Malthusian Theories.’ Available at https://mail.google.com/mail/?hl=en&shva=1#inbox. Last accessed 12 January 2011.

[8] See generally, Ehrlich, P. 1968. *The Population Bomb*. New York: Ballantine.

[9] Meadows, DL. J Randers, and Behrens, WW. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind.* New York: Universe Books, p.34. See also reports issued by the World Watch Institute – State of the World: produced annually since 1984; The World Commission on Environment and Development 1987. *Our Common Future*. The World Commission on Environment and Development. Gore, Al. 1992. *Earth in the Balance: Ecology and the Human Spirit*. Houghton Mifflin, Boston, MA and Hetsgaard, M. 1999. *Earth Odyssey*. Reprint Edition. Broadway Books.

> increasing in importance as demand skyrockets and supplies dwindle, a scenario that makes water crises and even wars seem entirely plausible; or it is a *commodity* to be bought and sold on the free market, as is the case with oil, gas and coal; or it is above all *the greater common good*, which "represent the serving link, not just the link – the understanding – between human beings and the planet they live on." … Within all these perspectives, the issues of fairness, equity and justice are pervasive.[10]

As Chapter 3 below shows in more detail, several earlier studies have found a positive statistical relationship between shared rivers and low-level interstate conflict. More optimistic water experts have claimed that cooperation over water is much more common than conflict.[11] As the literature review below shows, empirical studies have supported both claims to some extent. It is astounding to imagine, however, how Thomas Malthus' theory, which is not backed by empirical evidence still remains strong in public literature and how it has spilled into affecting how people think about international water resources and how nations should interact in its management. Earlier studies have, however, only

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[10] Malla, KB 2005. *The Legal Regime of International Watercourses Progress and Paradigms Regarding Uses and Environmental Protection*. Stockholm: Juridiska Institutionen Stockholms Universitet, p.1.

[11] Wolf, AT. 2002. 'Water Wars? Geographical Perspectives: Introduction'. *The Geographical Journal*, 2002 168(4): 289–292.

examined conflict and cooperation generally without asking whether the positive or negative interaction was specifically related to the sharing of a water resource. The position still has to be made clearer in the context of Southern Africa.

Despite this ongoing debate and efforts in previous studies to operationalise equitable use in transboundary water agreements,[12] no empirical work had been done to determine whether indeed, there was movement from conflict to cooperation or whether the potential for both existed. Thus, while it has been maintained that the Watercourse Convention already forms customary international law, no research had been conducted to assess whether implementation of this law had had any practical impact beyond the semantics of treaty language.

Underlying the aggregate pressure on the water resource base, there was some evidence of distributive inequality in access to such water resources. To this end where there was potential for cooperation, it was unfortunate that due to historical conditions and variances of the political frameworks in countries sharing transboundary waters, as well as the economic, social and cultural backgrounds, and in spite of bilateral efforts between countries, attempts among the third party countries and the international agencies, there

[12] Van der Zaag, P. Hubert, SIM. Savenije, HG. 2002. 'Towards Measurable Criteria for the Equitable Sharing of International Water Resources.' *Water Policy*. 2002 (4): 19–32.

was still a lot of dominant bottlenecks and problems to be solved in order to establish assured and stable conditions. On the other hand, where there was potential conflict, it was unfortunate that due to the lack of willingness among the regional institutions of these countries in the establishment of these institutes and due to the lack of mutual understanding, conflict resolution was restricted to temporary activities without being organised and sustainable. The question thus arose whether the signing of the water agreements on the use and management of Kavango waters had led to potential for conflict or cooperation?

Further, knowledge on the conditions for success/failure of international water management schemes or projects was scant. Social scientists and practitioners have put forward a large number of characteristics of international river management problems and institutional structures, postulating negative or positive associations between these characteristics and success or failure.[13] But very few attempts had been made to develop coherent explanatory models embedded in social science theories and to evaluate them systematically against empirical evidence. Most of the literature on international river

[13] For earlier reviews, see generally, Marty, F. 1997. *International River Management – The Political Determinants of Success and Failure*. University of Zurich: Zurich; Bernauer, T. 1997. 'Managing International Rivers', in Young O. (ed.). 1997, *Global Governance: Drawing Insights from the Environmental Experience*. MIT Press, Cambridge Mass. pp. 155–195

management was almost entirely descriptive and focused on management practices on individual rivers. A legal analysis of equity would thus help in filling in the inherent gaps in the existing literature. This dissertation sought to achieve that.

In some cases, such descriptive work is assembled in collective volumes in an effort to tease out the "lessons learned". Other work is predominantly prescriptive, proposing (presumably) effective or efficient management strategies and arguing rather eclectically with empirical illustrations, or (often the case in work by economists) making claims on the basis of pure theory (e.g., game theoretical or economic optimization models).[14] The vast majority of the very few observational studies designed to empirically evaluate an explicit set of hypotheses derived from social science theories are single case studies[15] therefore there was need for concerted and systematic research on this aspect. This legal study, attempts to fill in these gaps thus contributing to new knowledge in the process.

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[14] See e.g., Kilgour, MD. and Dinar, A. 1995. *Are Stable Agreements for Sharing International River Waters Now Possible?* World Bank, Policy Research Working Paper 1474, World Bank. Washington D.C.

[15] See e.g. Lowi, M. 1995. *Water and Power: The Politics of a Scarce Resource in the Jordan River Basin.* Cambridge University Press: Cambridge; Bernauer, T. 1996. 'Protecting the Rhine River against Chloride Pollution,' in Keohane RO and Levy, MA. (Eds.), *Institutions for Environmental Aid: Pitfalls and Promise*. MIT Press, Cambridge. Mass, pp. 201–233.

Reliance on customary international law to allocate surface or subsurface waters among states has proved to be too cumbersome and uncertain for the satisfactory resolution of disputes over interstate sources of water and too primitive to solve the continuing management problems in a timely fashion.[16] Furthermore, relying upon an informal legal system alone to legitimate and limit claims to use shared water resources is inherently unstable. Yet without an effective legal mechanism for resolving disputes over water, the disputes can only lead back to the law of the vendetta. Serious conflict in one form or another can only be avoided under the rule of equitable utilisation through a clear definition of the precise standards for managing the shared waters and the creation of a peaceful, legal mechanism for the orderly investigation and resolution of the disputes characteristic of the rule. Thus, although the customary international law for managing internationally shared waters fails to solve these problems, no solution is possible without the creation of the necessary law. Yet again where attempts have been made to sign agreements such as the OKACOM, such agreements are evidently short of clearly defined conflict resolution mechanisms – a regrettable situation which the Five Pillar Model developed in Chapter 8 below addresses and a gap which Annexure A and B cover.

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[16] Benvenisti, E. 1996. 'Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law.' *American Journal of International Law.* 1996 (90): 384-415; Dellapenna, J. (Ed.). 1997. *The Regulated Riparian Model Water Code*. Washington, DC: American Society of Civil Engineers.

The above informs us that if a co-operative management system is to be put in place for internationally shared fresh waters, that system must entail some sort of a legal and political mechanism for the orderly investigation and resolution of the disputes as characteristic of that theory.[17] Recurring bitter disputes, even overt military conflict, would inevitably continue if there is no effective alternative mechanism for resolving disputes. While stress on water resources itself creates real pressures for co-operative solutions to the problems confronting communities sharing the resource, the creation of a formal legal mechanism is a necessary prerequisite to preventing conflict over water in any set of communities where water resources are under stress.

Co-operative management has taken many forms around the world. Solutions have ranged from continuing consultations, to active co-operative management that remains in the hands of the participating states, to the creation of regional institutions capable of

[17] Dellapenna, J. 1994a. 'Treaties as Instruments for Managing Internationally-Shared Water Resources: Restricted Sovereignty vs. Community of Property.' Case *Western Reserve Journal of International Law*. 1994 (26): 27-56; Dellapenna, JW. 1994b. 'Rivers as Legal Structures: The Examples of the Jordan and the Nile', *Natural Resources Journal*. 1996 36(2):217-251; Kliot, N. Shmueli, D. & Shamir, U. 1998. *Institutional Frameworks for the Management of Transboundary Water Resources.* Haifa: Water Research Institute, Technicon.

making and enforcing their decisions directly.[18] Which of these approaches is appropriate to a particular basin depends on what this research reveals in the Okavango River Basin. Still, the long-term trend is towards greater integration; transboundary co-operation that begins in limited ways seldom remains at such levels, tending to progress towards greater cooperation as the need is recognised. The foregoing thus prompted the research questions outlined below.

1.4. Research questions

In the light of the foregoing, the questions below formed the crux of the study:

1. What constitutes an equitable transboundary water agreement and what constitutes an equitable allocation of shared waters?

2. Does the inclusion of equitable language in transboundary water management and allocation agreements really makes a practical difference in transboundary water law at the basin level with specific reference to the Kavango River Basin.

3. Has the signing of the water agreements on the use and management of Okavango waters led to conflict or cooperation? This required an

[18] Dellapenna, 1994, *supra*; Utton, A. 1996. 'Regional Co-operation: The Example of International Waters Systems in the Twentieth Century.' *Natural Resources Journal*. 1996 (36):151-54.

investigation of the relationship between water-related events and the signing of treaties hence a consideration of the following sub-questions:

a) Does a previous water event such as management or utilisation conflict lead to treaty signing?
b) And conversely, is a group of countries with a treaty more likely to see cooperative water events later?

4. Can the Regime Theory help us understand interstate water co-operation in the context of the Okavango River Basin and whether based on this understanding can a typology or model for Okavango River Basin can constructed?

1.5 Significance of the study

This study is significant in so far as it brings answers to the problems highlighted above and indeed the research questions. It starts from minute but very crucial investigations regarding the practical meanings of the principles of equitable water resource utilisation in cases where such water forms part of an international water course. With more than 260 international river basins covering 45% of the Earth's land surface, and with freshwater being humanity's most valuable natural resource, these questions are important in the context of the Okavango River Basin.

Focusing mainly on the Okavango River Basin, specifically, the study sought empirical answers to questions regarding the normative elements of the equitable transboundary water agreement and what constitutes an equitable allocation of shared waters in the context of international water law and the OKACOM Agreement. The answers to this question are very crucial in so far as one understands that equity is now one of the most frequently applied concepts in transboundary water agreements, particularly as related to water allocation.[19]

Despite its importance in academic debates and treaty texts, the actual impact of equity on transboundary water treaties remains a subject of dispute. While all sides admit that equitable language in international water agreements contains high levels of ambiguity, "some observers nevertheless assert that application of the Watercourse Convention

[19] Lautze J. and M. Giordano, 2006. 'Equity in Transboundary Water Law: Valuable Paradigm or merely Semantics?' *Colorado Journal of International Environmental Law and Policy* 2006 89(17): 90-91. See also, Wolf, AT. 1998. 'Conflict and Cooperation Along International Waterways.' *Water Policy* 1998 (1) 251; Wolf, AT. 1999. 'Criteria for Equitable Allocations: The Heart of International Water Conflict' *Natural Resources Forum* 1999 (23)1; Beaumont, P. 2000. 'The 1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines' *Water Resources Development* 2000 (16) 475.

provides a basis for negotiation and facilitates interstate cooperation and communication."[20] For example, McCaffrey[21] contends that the IWC's application contributes to equitable and sustainable use of international waterways and works to preserve ecosystems. Others, however, are not so optimistic. Hey[22] and Biswas[23] point out that the language of the IWC is far from clear or explicit, thereby accomplishing nothing in the way of regulating states' discretionary powers to reach agreement on water

[20] Lautze J. and M. Giordano, 2006, *supra* note 19, p.91.

[21] Lautze J. and M. Giordano, 2006, *supra* note 19. See also McCaffrey, S. 2001. *The Law of International Watercourses—Non-Navigational Uses*. Oxford: Oxford University Press.

[22] Lautze J. and M. Giordano, 2006, *supra* note 19. See also Hey, E., 1998. The Watercourses Convention: To what extent does it provide a basis for regulating uses of international watercourse? *Review of European Community and International Environmental Law* 1998 (7)3: 291-300.

[23] Lautze J. and M. Giordano, 2006, *supra* note 19. See also Biswas, AK. 1999. 'Management of International Rivers: Opportunities and Constraints', *Water Resources Development*, 15(4), pp. 429–441.

related issues. Similarly, Wolf[24] and Beaumont[25] note that the IWC's language of equity provides no practical guidelines for water allocation, which is arguably one of the most important components of international water treaties.[26] This prompted the drafting of Annexure A.

It remained unclear whether the inclusion of equitable language in transboundary water management and allocation agreements really made a practical difference in transboundary water law at the basin level with specific reference to the Okavango River Basin. The language of international water treaties often creates uncertainties. This called for a broad based content analysis of international water treaties including the agreement creating OKACOM. In this light, the rationale, management patterns, methods and achievements of the OKACOM agreement and other related International water agreements were examined with a view to drawing lessons which could facilitate the promotion of internationally co-ordinated sustainable development and transboundary water equity in

[24] Wolf, AT. 1999. 'Criteria for Equitable Allocations: The Heart of International Water Conflict', *Natural Resources Forum*, 23(1): 3–30.

[25] Beaumont, P. 2000. 'The 1997 UN Convention on the Law of Non-navigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines.' *Water Resources Development.* 2000 (16)4: 475-495.

[26] *Ibid*, p83.

the Okavango River Basin water and related resources. While highlighting potential advantages, notably from the perspective of problem-solving and conflict resolution, of adopting for this purpose certain basic patterns, methods and guidelines orienting the OKACOM, the specific geopolitical features of the Okavango River Basin and its environmental, economic and cultural constraints were also considered.

It has been assumed that where there is an international water agreement or at least an interstate Committee or Commission regarding shared water courses, there would be potential for cooperation as opposed to potential for conflict. As the literature review below shows, some authors quoted therein are of the opinion that the very existence of these water agreements is an indication that there is potential for conflict, thus agreements are there to avoid conflict. This study was thus significant as it would investigate whether the signing of the water agreements on the use and management of Okavango waters had led to potential for conflict or cooperation and used one basin case study and some comparative basins to arrive at informed conclusions.

Further, the study was important in so far as it elaborated how the contents and procedures of transboundary water equity and relevant laws on the subject had evolved in terms of concepts, theories and transboundary water management paradigms. In this regard it threw light on the law as it applies and should apply in Okavango River Basin, thus creating a model for transboundary water equity in the Basin balancing multiple uses and environmental protection.

In the context of the above, the study was significant, also, because it presents the development of theoretically more sophisticated explanatory models and their evaluation against an increasing body of empirical information. It provides a solid foundation for proceeding to a larger-scale research effort that involves the analysis of a larger set of empirical cases on the basis of a single explanatory model. Thus post-doctoral research may be provoked in this regard.

1.6 Limitations of the study

Just like any piece of research done over years this research was also with some difficulties. One expected problem was the process of obtaining information from the governments involved. The researcher encountered problems regarding the willingness of government officials to provide access to relevant documents. This problem was expected with all the other governments involved. The researcher however tried to use diplomatic approaches to obtain documents and assured non-dissemination of such documents for purposes not associated with study. This assured the officials that the documents would always be in safe hands.

Related to the above, the researcher notes that there was not enough literature on the subject regarding specifically the Okavango River Basin. Most of the existing literature[27] was on other river basins or if it was on the Okavango River Basin the perspectives and objectives are totally different since most of this literature came from research by engineers, environmental natural scientists and social scientists. This, however, can be taken to be a positive fact since it is through the non-existence of this literature that more research was seen to be wanting. Further this is one way this study will contribute to new knowledge in the field.

Further, the researcher notes the extent or size of the Okavango River Basin. It was not possible to cover all relevant parts or focal points within the basin. This could have affected the validity of the information to be gotten. The researcher, however tried to follow a systematic sampling method as outlined under the research methodology paragraphs below. This helped in creating an appreciable and valid representative sample whose data analysis results could be generalised to the whole Basin and even beyond.

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[27] See for example, Turton, AR. and Earle, A. 2004. *An Assessment of the Parallel National Action Model as a Possible Approach for the Integrated Management of the Okavango River Basin. Deliverable D6.2 of the WERRD Project funded by the European Union.* University of Pretoria.

1.7 Delimitation and scope of the field of study

Normatively, this dissertation deals with international water law and specifically, the law of international fresh waters. This concept has been defined as "a branch of public international law including the accepted legal norms on all sorts of usable waters, lakes and underground or interstate rivers."[28] A critical scrutiny of studies on internationally shared watercourses revealed in the literature review in Chapter 3 below have however demonstrated that internationally shared watercourses are not only governed by public international law but also by private international law and international economic law as shown in Chapters 5 to 7 below.[29] Although there has been controversy over the involvement of these other fields of study to the topic under analysis, it is trite to mention that this dissertation takes perspectives from all angles as long as they are relevant to the achievement of the objectives of this study and the answering of research questions.

In addition, this dissertation is not a search for the general principles and substantive or procedural rules with respect to the use allocation and protection of the Okavango River Basin. Rather, the dissertation, as the title indicates, analyses the law, principles and practice of transboundary water equity in the Okavango river basin. More specifically it

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[28] Osmanczyk, E. 1985. *Encyclopedia of the United Nations and International Agreements.* Philadelphia, PA. Taylor and Francis, p.254.

[29] This shall be clearer in chapters 5, 6 and 8 below.

contrasts the law and practice of transboundary water equity in the said basin. With comparative analyses of other big transboundary river basins in Southern Africa as it aims at coming up with a model for transboundary water equity in the Okavango River Basin which is presented in Chapter 8 below.

Geographically, this study is basin specific but is not based on the chosen case study alone, it covers a broader spectrum of other river basins in the sense that it has Chapter 5 which provides a regional comparative analysis of the concept of transboundary water equity in the Southern Africa's significant transboundary river basins. Thus the dissertation presents a specific case study in Southern Africa in general but the focus remains on the Okavango River Basin to which the recommendations are directed.

Finally, it is important to mention that this dissertation does not cover the concept of transboundary water equity in the areas of ice and groundwater / aquifers. Connected to this is exclusion of pollution of atmospheric waters which, though not so relevant to Southern Africa, is a topical issue in some parts of the world irrelevant to this study.

1.8 Arrangement of the Dissertation

Chapter 1: *General Introduction and Background to the Study*, has introduced the point that the exponential rise in global population and its growing resource needs has led to an inevitable geometric rise in demand for water. Further, while new technological innovations improve our ability to meet the new demands on water resources, it also plays

an important role in increasing the need for water for production and creates new and additional problems for people and for the environment such as river and sea pollution. At the centre of this growing demand is how nations relate to each other in the management of trans-boundary water resources be they underground or surface waters.

Having noted the above prediction of water scarcity in the world and its potential conflict origination, the Chapter also shows how this research was done in the light of the research questions herein outlined. This chapter further shows the statement of the problem and the orientation of the study in the light of such questions. To this end the chapter also provides an indication of what the content of the whole dissertation is, being an outline of all the chapters in the dissertation. Below therefore is an outline of the Chapters that will follow in this Dissertation.

Chapter 2: *Methodology, Research Design and Processes*, describes the research paradigm, theories and methodologies used to carry out analyses of discourses and phenomena in the law principles and practice of transboundary water equity in the Okavango River Basin. It is shown in this chapter that the researcher employed multiple methodologies and adopted various theories in approaching or interpreting different types of data gathered. The technique of triangulation (well dealt with therein) and the interpretive and critical paradigms was employed in the analysis of data gathered from empirical data and desk research. The purpose of employing these techniques is to answer the research questions and address the problems stated in Chapter 1. This will be done in

the context of the theoretical background laid bare in Chapter 3. In this chapter the techniques of research data gathering and data analysis are analysed and the appropriate choice between and or among them exposed and justified.

Chapter 3: *Literature Review and Theoretical Framework,* presents the literature review and the theoretical foundation of the study. In more precise terms, the Chapter examines the context in which this study finds itself, starting by exposing some of the relevant findings in regard to rural water supply in a pluralistic society. Further, the Chapter presents an overview of the international debates in relation to some of the research questions outlined in Chapter 1. Reference to the various research pieces and literature in general and an analysis of findings and conclusions in such literature, serves to explore the past and current discussions triggered by the different topics.

Accordingly, the purpose of Chapter 3, therefore, is to provide an overview of the literature on the research questions and the stated problems outlined in Chapter 1. Further, it provides a general organisation and patterns and combines summaries of concepts in international law of watercourses. Depending on the topic covered by the concerned piece of literature, in some cases new interpretation of old material are given and or combinations of new and old interpretations of concepts and data are provided. Some parts will trace the intellectual progression of the field, including major debates. And depending on the sub-topic, evaluations of the sources are provided and advice on most pertinent or relevant principles or laws are given.

Chapter 4: *The History and Development of the Law of Internationally Shared Watercourses in the context the Okavango River Basin*, follows the development of the law of internationally shared watercourses. This is done in the light of the developments in the relations between the countries sharing the Okavango River. Therefore, this chapter is a combination of both the history of water law at global level and water law as it developed interstate at the level of Okavango River Basin. This combined historical analysis and exposé leads to the answering of the questions regarding what constitutes an equitable transboundary water agreement and what constitutes an equitable allocation of shared waters? The controversies surrounding this question will be decoded and the OKACOM agreement is analysed in the light of international legal principles as they developed over the years.

Further, this chapter explores the role that international law can play in international water management in the Okavango River Basin, in which law has played the largest role. The first parts of the Chapter describe the patterns of customary international law that have developed over the years to coordinate the management of internationally-shared water resources, particularly focusing on the waters of the Okavango River Basin and the latter parts consider the concept of water equity in international law and in the context of OKACOM agreement.

Chapter 5: *Comparative Water Law: Analysis of Transboundary Water Equity Discourses in Southern Africa,* provides some comparative analyses of four significant river basins in Southern Africa. Specifically, it looks at the Zambezi River Basin, the Orange-Sengu River, and Incomati River Basin. This choice was made carefully and strategically. These rivers do not only form part of Southern Africa's most hydro politically sensitive and most shared Rivers but also represent a significant element of the aspects needed in answering research questions stated above especially regarding conflict and co-operation. Geographically they also cover significant number of countries in different cultures, climates and geopolitical locations.

The comparative analysis of conflict and/or cooperation in the management of these rivers will lead to an informed worldview of how river basins are being managed across the world and what the general trend is: whether there is movement from potential conflict to cooperation potential or it is *vise versa*. In addition, the institutional arrangements will be analysed with special focus on their politics or role in fostering cooperation or conflict. This will be used to reflect again on what is transpiring in the Okavango River Basin, thus connecting to Chapter 6.

Chapter 6: *Beyond Transboundary Water Law: International Water Relations in the Okavango River Basin,* describes and analyses the thrust of the hydro politics among Okavango River Basin states. To achieve this, chapter 6 traces the major water events as they happened among the three mentioned riparians. The political underpinnings are

decoded and analysed to come to the point of understanding the behaviours of the riparians. This understanding helps in answering the broader research question regarding conflict and cooperation dynamics in the Okavango River Basin.

This reflects on the findings in Chapter 7, but without dealing with the content of the OKACOM agreement, this chapter analyses the hydro politics of mutual suspicion, unilateralism and mistrust in the basin and how these foster or torpedo equitable utilization of Okavango River Basin resources. It begins with theoretical points; setting the discourse of international water relations and moves into the specific and major water events in the basin. It then interprets them through the lens of international water relations, giving answers to the relevant research questions and wraps up with a conclusion that sums up the major discussions in the whole chapter and makes reflections on the next chapters.

Chapter 7: *In and out of OKACOM: Decoding the Drivers, Organisational Principles and Functionality of OKACOM,* connects to the analysis in the previous chapters above and deduces and analyses the major goals and interests which lead to the formation of OKACOM. These goals and interests, otherwise known as 'drivers', are distinguished from the actors who attempt to realise these goals or interests. To this end the chapter leads to answers to the question whether the inclusion of equitable language in transboundary water management and allocation agreements really makes a practical

difference in transboundary water law at the basin level with specific reference to the Okavango River Basin.

The chapter recognises that as long as there have been countries sharing water, there will always be disputes over how the water has been shared – disputes or potential conflict is inherent in any situation where states have to share a common resource such as a river which straddles their borders. In this light, the chapter seeks answers to the question whether the signing of the water agreements on the use and management of Okavango waters has led to potential conflict or cooperation potential. This is done through an investigation of the relationship between water-related events and the signing of treaties, hence a consideration of the research questions.

To answer these questions, external and internal drivers of the OKACOM Agreement are analysed with special interest on the internal and external drivers and in the light of the hydro politics as illuminated in Chapter 6 above. To this end, this chapter is a very crucial one for it gives most of the answers to the overall question regarding whether the OKACOM Agreement can be taken as an instrument of inter and intra-state conflict or co-operation. With this understanding, the chapter also highlights answers to the question whether the inclusion of equitable language in transboundary water management and allocation Agreements really makes a practical difference in transboundary water law at the basin level with specific reference to the Okavango River Basin.

Chapter 8: *Lessons and Recommendations: A Legal and Hydro political Approach to OKACOM Transboundary Water Equity for the Riparians* provides a summation of the findings in previous chapters especially Chapter 4 to 7. These Chapters provide crude results of some of the issues which were highlighted in this Chapter in addition to the research questions. Chapter 8 further provides recommendations on a number of options where problems have been identified. The lessons and recommendations are in line with the research questions outlined above this Chapter and goes beyond to cover what further research might have to answer.

The lessons and recommendations are made with specific regard to the research question on whether the Regime theory can help us understand interstate water co-operation in the context of the Okavango River Basin and if so, how, it can help. Based on this understanding if any, a typology or model for Okavango River Basin can be constructed and will be recommended for practical application and or implementation on the ground. The models are presented diagrammatically and explanations given. These models reflect the contents of Annexure A and B. The chapter goes on to conclude with the highlights on what further or related research can be based on.

Chapter 2

Data Collection and Research Methodology

2.1 Introduction

In any research, it is imperative to show the methods that were used in coming up with the research findings. In this context, in this dissertation it is important to notice that the mixed construction of the study's theoretical framework, described in the preceding chapter, required a methodology that, in turn, borrowed from various research methodologies and paradigms. Therefore, having explored and analysed the theoretical framework of this study, it is imperative that a methodology is adopted which suits the researcher and methods used in the research process. In this light, this chapter describes the research paradigm, theories and methodologies used to analyse discourses in transboundary water equity.

It is shown herein that the researcher employed multiple methodologies and adopted various theories in interpreting different types of data gathered. The technique of triangulation and the interpretive and critical paradigms was employed in the analysis of data gathered from largely desk research. The purpose of employing these techniques was to answer the research questions and address the problems stated in Chapter 1. This was done in the context of the theoretical background outlined in Chapter 3.

Various scholars in different disciplines especially those in education and social sciences have concluded that "to minimize the risk of being biased is to follow the principle of triangulation".[30] These scholars go further to argue that being confined to one research methodology or one particular data collection method restricts research into the category of authoritative ideological past research approaches.[31] Thus, various researchers advocate the selection and implementation of whatever method that suits the research question or problem.[32] In this light, this researcher chose different methods for different purposes making this research a mixed one in terms of data collection and analysis.

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[30] Wodak, R. and Meyer, M. (eds.) 2001. *Methods of critical discourse analysis*. London: SAGE publications Limited, p.65, see also Benwell, B. and Stokoe, E. 2006. *Discourse and identity*. Edinburgh: Edinburgh University Press. See also Bloor, M. 1978. 'On the Analysis of Observational Data: A Discussion of the Worth and uses of Inductive Techniques and Respondent Validation.' *Sociology*, 12(2):542-52.

[31] Hende, MO. 2009. *ELT Course Descriptions in Tertiary Education: A Critical-interpretative Investigation*. Unpublished PhD thesis in Education. University of Exeter.

[32] Meyer, M. 2001. 'Between theory, method and politics: Positioning of the approaches to CDA.' In Wodak, R.and Meyer, M. (eds.) 2001. *Methods of critical discourse analysis*. London: SAGE publications Limited, pp.14-31; Tashakkori, A. and Teddlie, C. 1998. *Mixed methodology: Combining qualitative and quantitative approaches*. London: Sage Publications.

2.2 Research paradigm

The term "paradigm" refers to the process of scientific practice based on people's philosophies and assumptions "about the world and the nature of knowledge; in this context, about how research should be conducted."[33] According to Burrell and Morgan, "to be located in a particular paradigm is to view the world in a particular way".[34] Two major paradigms in research which are often placed on opposite ends are the positivistic or scientific research and the interpretive paradigm. This research falls into the second category which is the interpretivist research paradigm and follows mainly the method of phenomenology. This method of inquiry is based on the premise that reality consists of objects and events as they are perceived or understood in human consciousness and not of anything independent of human consciousness.[35] Therefore, for Husserl, phenomenology is a method of philosophical inquiry that rejects the rationalist bias that

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33 Collis, J. and Hussey, R. 2003. (2nd ed). *Business Research a Practical Guide for Undergraduate and Postgraduate Students*, Palgrave Macmillan, London, see also Corbetta P. 2003. *Social Research Theory, Methods and Techniques*. Sage: London.

34 Burrell, G. and Morgan, G. 1979. *Sociological paradigms and organisational analysis: elements of the sociology of corporate life*. London: Heinemann, p.24.

35 This method was developed in about 1905 by Edmund Husserl: see, Edmund. H. 1970. *The Crisis of the European Sciences and Transcendental Phenomenology*. Evanston: Northwestern University Press, p.240.

has dominated Western thought since the times of Plato in favour of a method of reflective of attentiveness that discloses the individual's "lived experience."

From the foregoing it can be submitted that this is an inclusive method which fits with the purpose of the research as shown in Chapter 1 above. This is because there has not been a study of this nature in the Okavango River Basin, and the lived experience in this context is the one which is analysed without any bias. Further the choice of this method fits with growing trends where there is a general movement from pure positivist paradigms to more inclusive approaches.[36]

From the heading of the dissertation above it can be argued that this research is based on a case study. This prompted the author to follow the interpretivist paradigm; specifically the method of phenomenology. This method focuses on detailed understanding of specific case studies and its findings may be generalised to other similar settings.[37] This

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[36] See observations in Suri, H. and Clarke, D. 2009. 'Advancements in Research Synthesis Methods: From a Methodologically Inclusive Perspective', *Review of Educational Research.* 2009 (79) 1: 395-430.

[37] Kincheloe, JL. 1991. "Exposing the technocratic perversion of education: the death of the democratic philosophy of schooling", in Van Patten, J J. (ed.). 1991. *The socio-cultural foundations of education and the evolution of education policies in the United States* Lewiston, NY: Edwin Mellen Press, pp.193-226.

is because the key to generalisation is difficult if not impossible to comprehend when one does not understand how much research results can be applied backwards to represent the river basin, as a whole. The first example, using other comparative river basins, would be a strong representation, because the range and number of samples is high. In this context testing one river basin makes generalisation difficult and affects external validity as will be explained in more detail below under validity and reliability. This explains why this dissertation comparatively looks at other river basins in Southern Africa as the title denotes.

2.3 Qualitative or Quantitative Research?

Generally, researchers have regarded the positivist paradigm as associated with quantitative research whereas the interpretivist paradigm is associated with qualitative research methodology. Quantitative method is used in studies where information aims to measure and score statistical processes as well as numerical observations. Mathematical models are frequently used in quantitative methods. Information and data used is not affected by the researcher's subjective values and influences. Qualitative methodology on the other hand, is used when the research aims at creating a deeper understanding and a more detailed analysis of a specific study area.

With this understanding and following a review of literature on research methodology, it was deemed appropriate to apply both qualitative and quantitative research. This position came as literature proved that there was no research which was purely qualitative or

quantitative. The data giving content to this thesis came out of both numerical and verbal data and it was realised that data contained in words has numerical values. Trochim[38] has demonstrated that all qualitative data can be coded quantitatively and that all quantitative data is based on qualitative judgments. This position is explained in more detail below.

2.3.1 The discussion and justification

Authors on research methodology differ a lot on what is the best method to follow when and in what circumstances in the field of research.[39] Quantitative researcher Fred Kerlinger believes that "There's no such thing as qualitative data. Everything is either 1 or 0". To this another researcher, Campbell, asserts "all research ultimately has a qualitative grounding".[40] This back and forth banter among qualitative and quantitative researchers is "essentially unproductive" according to Miles and Huberman. They and many other researchers agree that these two research methods need each other more often

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[38] Trochim, W. 2006. 'The Qualitative Debate in Social Science Methods', available at http://www.socialresearchmethods.net. Last Accessed 23 February 2011.

[39] See Guba, EG and YS. Lincoln, 1994. 'Competing paradigms in qualitative research', in NK Denzin and YS Lincoln (eds.) *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage Publications, pp.105-117.

[40] Miles, M. and M. Huberman, 1994. *Qualitative Data Analysis*. Newbury Park, CA: Sage Publications, p.40

than not.[41] There is a general consensus that quantitative data involves numbers whereas qualitative data involves words and that qualitative research is inductive while quantitative research is deductive. Some assert that in qualitative research, a hypothesis is not needed to begin research and all quantitative research requires a hypothesis before research can begin.[42]

The discussion below and the authorities cited show that there is a divergence of opinion in regards to the choice and efficacy of the methodologies that can be used in various types of research. The discussion shows that some researchers believe that qualitative and quantitative methodologies cannot be combined because the assumptions underlying each tradition differ.[43] Other researchers think they can be used in combination only by alternating between methods: qualitative research is appropriate to answer certain kinds of questions in certain conditions and quantitative is right for others.[44] Furthersome,

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[41] Hoepfl, ME. 1997. 'Choosing Qualitative Research: A Primer for Technology Education Researchers,' *Journal of Technology Education* 1997(9)1:47-63.

[42] See Yin, RK. 1994. *Case Study Research, Design and Methods*. Thousand Oaks, CA: Sage Publications.

[43] Hoepfl, ME. 1997. 'Choosing Qualitative Research: A Primer for Technology Education Researchers'. *Journal of Technology Education* 1997(9) 1:47-63.

[44] Strauss, A. and Corbin, J. 1990. Basics of Qualitative Research: Grounded Theory Procedures and Techniques. Newbury Park, CA: Sage Publications, Inc.

researchers think that both qualitative and quantitative methods can be used simultaneously to answer a research question. [45]

With regard to the divergent ideas, it should be noted that each approach to gathering or analysing data has its own shortcomings. Rather than discounting either approach for its drawbacks, though, this researcher elected to find the most effective ways to incorporate elements of both to ensure that this study is as accurate and as thorough as possible. This found support in Trochim's submission that all qualitative data can be coded quantitatively and that all quantitative data is based on qualitative judgments.[46] This blurs the distinction between quantitative and qualitative data which is necessary to maintaining a superiority claim by those who advocate quantitative research.

2.3.2 Choice of appropriate method

Although quantitative research is an effective research tool in scientific research, it is not superior to qualitative research in terms of the requirements of legal research because it cannot fully address the philosophical issues of ontology, epistemology and ethics, which are inherent to multidimensional and interdisciplinary research which covers parts of Chapters 4 to 8 below. Consequently, it can be said that the discussion on which research technique is superior is an example of a false dichotomy since both are necessary for a

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45 Trochim, 2006. *Supra* note 38.

46 *Ibid.*

holistic understanding of teaching and learning.[47] This means that the researcher is entitled to follow a "mixed-method" approach and this researcher believes that such an approach is more appropriate when studying such complex and dynamic phenomena as law and specifically rural water supply.

> Qualitative and quantitative methodologies are not antithetic or divergent; rather they focus on the different dimensions of the same phenomenon. Sometimes, these dimensions may appear to be confluent: but even in these instances, where they apparently diverge, the underlying unity may become visible on deeper penetration ... The situational contingencies and objectives of the researcher would seem to play a decisive role in the design and execution of the study.[48]

On the understanding of the above, it must be understood that while this research relies on a mixed-method approach, it is mainly concerned with qualitative analysis. In consideration of the complexities shrouded in the research questions stated in Chapter 1 above and the nature or diversity of data to be decoded, a single methodological approach was deemed inadequate and unhelpful to provide reliable or concrete answers to the

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[47] McMahon, KD. 2009. Quantitative Research is More Effective than Qualitative Research in the Studying of Science Teaching. Unpublished paper. On file with researcher.

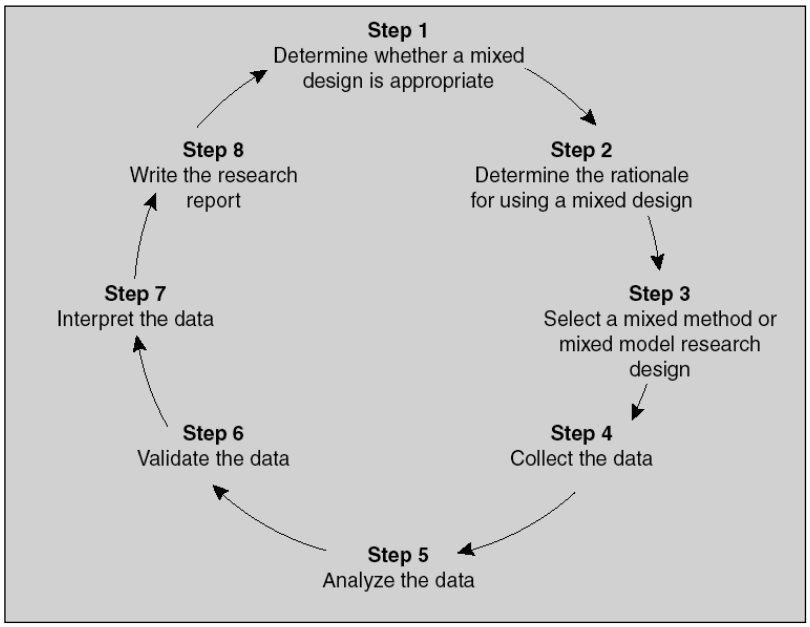
[48] Mathison, S. 1988. 'Why triangulate?' *Educational Researcher,* 1988 17(2): 13-17.

research questions and inform feasible recommendations. Some of the complexities that are inherent in this research are the various politico-legal orientations of the concept of transboundary water equity, the various environmental concerns that underpin transboundary water management, the technological aspects regarding water development plans as well as the statistical issues regarding water as a dynamic resource that goes through a cycle and also importantly cultural aspects of water in the transboundary water management.

These complexities combined, justify the use of a mixed research approach and the use of triangulation as a method of data analysis which will be discussed in detail below. This seems to be meeting the requirements of a critical analysis of the law, principles and practice of transboundary water equity in the Okavango River basin where all the above factors are at play.

It must be noted further that the employment of the mixed approach led to a better understanding of the concepts explained in the following chapters. It also helped in the understanding of concepts which were somehow alien to pure legal studies such as concepts embodied in Chapter 6 below where transboundary water relations are looked at from the angle of a mixture of international relations, environmental conservation and law. In terms of process, below are the stages generally followed in mixed research approach.

Figure 1: Stages in mixed research approach



Source: Onwuegbuzie and Teddlie (2003)[49]

Although the stages are numbered, they are not cast in stone and this researcher constantly moved between the stages and crossed over them as well. The mixed method approach that employs both quantitative and qualitative research casts a larger net allowing for the

[49] Onwuegbuzie, AJ. and Teddlie, C. 2003. 'A framework for analysing data in mixed methods research.' In Tashakkori, A. and C. Teddlie (eds.), *Handbook of mixed methods in social and behavioural research*. Thousand Oaks, CA: Sage, pp.351-383. See also Johnson, RB. and Onwuegbuzie, AJ. 2003. 'Mixed Methods Research: A Research Paradigm Whose Time Has Come.' *Educational Researcher,* 2003 33(7):14–26.

collection of more and diverse data. This does not necessarily lead to an "anything goes" epistemology. As St. Pierre observed in quoting Foucault:

> I believe too much in truth not to suppose that there are different truths and different ways of speaking truth. The science I value acknowledges that there is different truths and that our task as scientists should be to produce different knowledge and produce knowledge differently in order to enlarge our understanding of those issues about which we care deeply.[50]

In international water law, what is the ontological basis of a mixed-method approach? – After all, quantitative researchers seek to "describe things as they are," while qualitative researchers seek to describe the individual or socially constructed universe. How can these ontologies be reconciled? It is held that reconciliation can only occur when researchers acknowledge the utter uniqueness of the subject being studied—the law, principles and practice of transboundary water equity – at both interstate and traditional community levels where things can be explained as they are and at the same time some social and or political constructions have to be decoded in an analytical and descriptive manner.

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[50] St. Pierre, E. 2006. 'Scientifically Based Research in Education: Epistemology and Ethics.' *Adult Education Quarterly*. 2006 56(4):239-266.

In consequence therefore, quantitative research is not more effective than qualitative research in the studying of science education. Indeed, limiting legal research to a positivistic/scientific approach is philosophical reductionism. Data generated by both quantitative and qualitative research enables all stakeholders in law making and policy making to make informed decisions.

Further, using multiple approaches can capitalise on the strengths of each approach and offset their different weaknesses. A growing number of research and evaluation studies make use of mixed methods, that is, both quantitative and qualitative methods within a single study.[51] Some authors have supported and referred to the mixed method as "a way of democratically engaging with difference."[52] Given that each of these approaches has its own strengths and limitations, combining them seems a good idea. It appears to offer

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[51] See Johnson, R. and Onwuegbuzie, A. 2004 'Mixed methods research: a research paradigm whose time has come.' *Educational Researcher*. 2004 33, 7: 14-26. Elliott, J. 2004 'Multimethod approaches in educational research' *International Journal of Disability, Development and Education.* 2004 51(2):135-149. Rocco, T., Bliss, L., Gallagher, S. and Perez-Prado, A. 2003 'Mixed methods research in organizational systems', I*nformation Technology, Learning and Performance Journal.* 2003 21(1): 19-40.

[52] Greene, J. 2002. 'Mixed-method evaluation: a way of democratically engaging with difference', *Evaluation Journal of Australasia.* 2002 2 (2): 23-29.

a more comprehensive approach to finding answers to research questions, especially since many questions in transboundary water equity are complex and cannot easily be answered using a single method.

This researcher's role also influenced the research paradigm which had to be followed. It was understood that taking a purely quantitative research as the case might be, would ideally render this researcher an objective observer who would neither participate in nor influence what is being studied. On the other side, it was noted that to make this research wholly qualitative, this researcher could learn the most about a situation by participating and/or being immersed in it but would be crippled in quantitatively analysing data collected quantitatively. Overall therefore, the underlying assumptions of both methodologies which guided data collection and analysis were noted and it was deemed reasonable to combine the two methods in this research.

> The use of multiple data sources to examine the same dimension of a research problem enhanced the validation process by ensuring that weaknesses inherent in the approach were counterbalanced via strengths in another.[53]

[53] Denzin NK. 1970. *The Research Act: A Theoretical Introduction to Sociological Methods.* Aldine, Chicago. Jick, TD. 1979. 'Mixing quantitative and qualitative

2.4. Research design

2.4.1 General

As illuminated above, this study was based on a mixed research methodology. However considering the dynamics of the research world one does not necessarily have to go into the field to gather data whenever they do the research of whatever nature but informal communications with the people involved are necessary to analyse the data obtained on the desk. Further this does not mean that desk data is just qualitative or quantitative – hence a mixed approach remains relevant.

Against this backdrop therefore, this researcher had casual discussions with various stakeholders in the Okavango River Basin. There was no systematic empirical research. This researcher conducted literal analysis of existing literature (both quantitative and qualitative data) and did comparative analysis with other river basins on the same basis in the world such as the Orange, the Incomati, the Zambezi and the Limpopo. This ensured that critical issues were picked up and analysed against what is obtaining on the ground.

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methods: Triangulation in Action', *Administrative Science Quarterly*. 1979 24 (4) 601-611.

Some of the information of what is obtaining on the ground was gotten through informal discussions with some stakeholders in the three countries including OKACOM officials. Where appropriate these sources are cited in footnotes across all chapters in this dissertation. Considering ethics those who preferred anonymity were not cited at all and their points or views were taken as generalisations.

Regarding desk research, to answer research questions as stated above, a collection of water agreements, treaties, protocols, water statistics and significant amendments concerning transboundary waters at both international and the Kavango River Basin was done. This compilation included agreements that consider water as a scarce or consumable resource, a quantity to be managed, or an ecosystem to be improved or maintained, and those dealing with river boundaries, navigation, or fishing rights. These agreements were analysed in the light of the applicable laws of contract and international water law.

As noted above, no research method is entirely qualitative or quantitative.[54] To this end, this study took a holistic, interdisciplinary and legal plurality conscious qualitative multi-disciplinary based approach to the analysis in order to integrate legal, social, economic

[54] Yin, RK. 1994. *Case Study Research, Design and Methods*. Thousand Oaks, CA: Sage Publications.

and ecological perspectives expected to inform answers to the research questions outlined above.

2.4.2 About the Okavango River Basin

The Okavango River Basin forms the crux of this study. This Basin is the fourth largest international river basin in Southern Africa, and the Kavango is the largest river in the region that does not empty out into an ocean. Estimates of the Kavango Basin area range from 320,000[55] to 570,000 square kilometres and 586,000[56] to 721,277 square kilometres. The main river in the catchment is the Kavango, or, as it is called in Angola, the Rio Cubango.[57]

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[55] Stanley Consultants, 1995. *SARP - Southern African Regional Water Assessment*. Washington, D.C.; U.S. Agency for International Development, pp.2-13

[56] Pallett, J. 1997. *Sharing Water in Southern Africa*. Desert Research Foundation of Namibia. Windhoek, Namibia, p.73. See also World Resources Institute and World Watch Institute, 1998. *Watersheds of the World: Ecological Value and Vulnerability*. World Resources Institute (WRI) and World Watch Institute. Washington, D.C. pp.2-26.

[57] Hitchcock, RK. 2010. Water Resource Use and Management in the Okavango System of Southern Africa: The Political Economy of State, Community and Private Resource Control. Available at http://www.africanwater.org/hitchcockdoc1.htm. Last accessed, 28, 2011

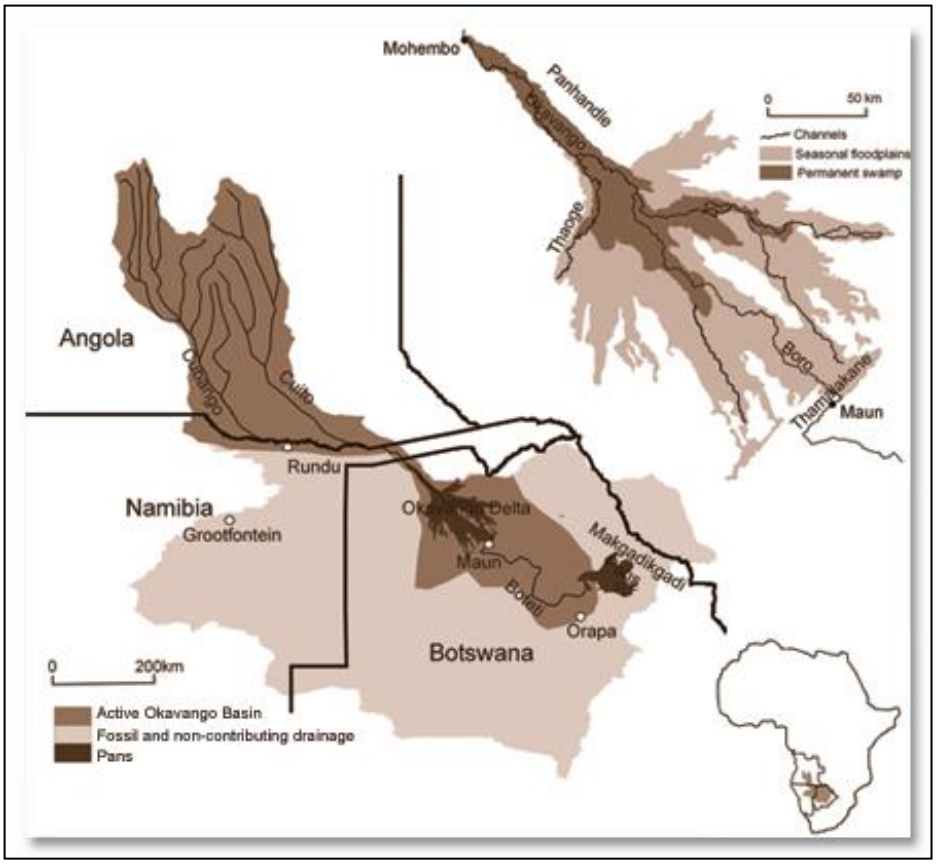
The Okavango River Basin covers a hydrologically active area of approximately 323 192 km^2 shared by three countries in southern Africa: Angola, Namibia and Botswana. The Okavango River runs for 1,100 km from central Angola, as the Kubango, through Namibia to the Kalahari in Botswana where it forms an inland delta. In more detail, as shown in the diagram below; the Kavango River rises in the southern Angolan highlands, flows south-eastwards some 650 km to Namibia, where it forms the border for some 350 km. The river then turns southwards, crosses the Caprivi Strip over a distance of 60 km, and then flows into Botswana, where it supplies the Kavango Delta. The major tributary of the Kavango River in Angola is the Rio Cuito, and the catchment for the two rivers together is some 120,000 square kilometres, nearly all of which is in Angola.[58]

The Okavango Delta, the largest of its kind in Africa, is considered to be highly significant, both from the standpoint of its geomorphology and hydrology and its biological richness. Not only does it contain over 1,100 different species of plants and 65-70 species of fish, but it also supports a wide variety of large and small faunal species,

[58] *Ibid.*

some of which, including the *sitatunga* (*Tragelaphus spekei*) are rare. The archaeological and historical records indicate long-standing human use.[59]

Figure 2: The Okavango River Basin



[59] Campbell, AC. (Ed). 1976. *Traditional Utilization of the Okavango Delta.' Botswana Society*. Proceedings of the Symposium on the Okavango Delta and Its Future Utilization, Gaborone: Botswana Society, pp163-173.

Source: OKACOM[60]

The mean annual runoff at the mouth of the Okavango River is 11,000,000 cubic meters per annum. In Botswana, water inflow to the Kavango Delta ranges from 7,000,000 to 15,000,000 cubic meters and averages 10,000,000 cubic meters per annum.[61] Most of this inflow (97%) is lost to evapotranspiration and seepage. The long-term outflow of the Delta is estimated to range from 253-345 MCM/year.[62]

2.4.3 Research instruments

There are two commonly used sources of data: primary and secondary data.[63] These data are of different qualities and have different bearings in so far as the answering of the research questions is concerned. This researcher was the prime data gatherer. Primary

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[60] OKACOM, 2011. '*The Permanent Okavango River Basin Water Commission', a*vailable at: http://www.okacom.org/okacom.htm . Last Accessed 13 August 2011.

[61] Hitchcock, 2010, *supra*, note 57.

[62] Scudder, T., Manley, RE. Coley, RW. Davis, RK Green, J. Howard, GW Lawry, SW. Martz, D. Rogers, PP. Taylor, ARD. Turner, SD. White, GF and Wright. EP.1993. *The IUCN Review of the Southern Okavango Integrated Water Development Project.* Gland, Switzerland: IUCN - The World Conservation Union, p.7.

[63] See generally, Miles, M. and Huberman, M. 1994. *Qualitative Data Analysis*. Newbury Park, CA: Sage Publications.

data collection was met mainly through informal discussions with stakeholders in Transboundary water equity and experts in the areas related to this research. Some of the primary data was gotten through desk based research. Primary Data is own obtained information used in a study, the data can be collected in various ways like interviews, surveys and experiments. Some of this kind of primary data was from previous research which touched a lot on international water law and water relations relevant to this study. Primary data includes pieces of legislation such as the Conventions and Water agreements dealt with in this Dissertation.

Again secondary data was gotten through desk research. Secondary Data are already produced data which was originally developed for a purpose other than the study and this may include media productions, internet sources, scholarly books, reviews and research articles.[64] To gather these, local libraries in Namibia especially the University of Namibia and other libraries across the city of Windhoek were visited. The University of London School of Oriental and African Studies' SOAS Library and archives were also accessed. Additionally, the University of London Institute for Advanced Legal Studies was accessed.

Working at Stellenbosch University as a Research Fellow for three months from September to December 2012 contributed to this study. The length of the literature review

[64] Which are shown in the Literature Review below and also other chapters below

below in Chapter 3 is evidence of the amount of material that was consulted during this research.

Since there was no intention to include empirical research and more of a qualitative method under the mixed approach was applied, no questionnaires were designed and no formal interviews were conducted. Desk research was used to find published information as opposed to going to the field to gather it and analyse it.

2.4.4 Research processes

Desk research was very systematic, multi-dimensional and multi-disciplinary. The early stages of it actually took more time than the latter parts; an indication that if the research is not planned well the process can be hampered by difficulties and frustrations. An area of research was chosen before a topic was formulated. Reading around the area was done and supervisors consulted. This helped in developing a topic to research on.

Once the research topic was refined, research questions were developed. Questions which lingered included whether answers to them would bring anything new to the field of law, whether there would be enough literature to answer them. The topic was discussed with other people especially at conferences in and out of the country where experts gave more insights on the angles that could be concentrated on.

A research proposal was developed according to University rules and same had to go through the structures until it was approved.

To make the research project more systematic and organised, a desk research plan including a flexible timetable stipulating the time frame to be spent on gathering information on a specific aspect or chapter was developed.

Once found, data was recorded in the form of notes or photocopies. In the case of on-line searches, the literature was downloaded into files and sources and date of retrieval recorded. In the process Most secondary data accessed through desk research was originally generated through primary research. Some of the writings in this process which will be explained in more detail below were triangulated. Where possible, two or more sources for the same data were compared and data from personal communications or informal interviews and from desk research juxtaposed to arrive at well informed answers to the above stated research questions. Below is how this data was analysed.

2.4.5 Data analysis

As noted above, the mixed approach was used and this is underlined by the philosophy of pragmatism which accepts the real world situation. Further if one has to come up with with research results which are acceptable, one should use that which is useful in that context to achieve the intended purpose or to produce the intended results. In this light, in order to avoid bias in the process of data interpretation, triangulation which falls within

the interpretative paradigm explained above was used. According to Golafshani, triangulation is the combination of more than one research tool in the study of the same phenomenon.[65] The discussion of the above paradigms that follows is based on the assumption that a research paradigm involves assumptions about ontology, epistemology and methodology. [66]

This research considers Okavango River Basin as the case study but also considers other comparative brief case studies. This requires special data analysis methods. Therefore it

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[65] Golafshani, N. 2003. 'Understanding Reliability and Validity in Qualitative Research.' Available at http://www.nova.edu/. Last accessed 11 February 2009.

[66] Ontology means what can be known about the world; epistemology means relationship between the knower and the known and methodology connotes how the knower goes about the task of knowing. See Hende, MO. 2009. *ELT Course Descriptions in Tertiary Education: A Critical-interpretative Investigation*. Unpublished PhD thesis in Education. University of Exeter, citing Lincoln, YS and Guba, EG. 1985. *Naturalistic Inquiry*. Canada: Beverly Hills; Lincoln, YS. and Guba, EG. 2000. 'Paradigmatic Controversies, Contradictions, and Emerging Confluences.' In Denzin, NK. and Lincoln, YS. (eds.) *Handbook of Qualitative Research*. 2nd ed. Thousand Oaks, CA: Sage, pp.163-188.

started with a general analytical study as per Yin's[67] position that in research every case study should start with a general analytical strategy. These general analytical strategies with regard to case studies provided a system by which to set priorities for what to analyse and why. It was noted that "the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust". [68]

Case studies were also considered during this research and in analysing them in the context of all other available data, researcher followed the proposition of Yin[69] who says that, before data can actually be analysed, a researcher using case studies can choose from two general analytical strategies being (1) reliance on theoretical propositions which is the most common.[70] The result of this is the collection of data based on research questions taken from previous studies and comparing findings with these previous studies or those used in the frame of reference. (2) Developing a case description can be used as a strategy as well, according to Yin, but this is less favourable and should only be used when little previous research has been done. Both analytical methods were used in this research and analysis of data.

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67 Yin, RK. 1994. *Case Study Research, Design and Methods*. Thousand Oaks, CA: Sage Publications.

68 Yin, 1994, *supra*, note 67, p.45.

69 *Ibid*.

70 *Ibid*, p.103-104.

Cross-case data analysis was used where data in one case was compared to data in the other cases. The situation in Okavango River Basin was compared to other case studies like the Orange, Incomati, and Zambezi considered in Chapter 5 below. Therefore, in order to come up with general conclusions on what was gathered in this research process; the inductive strategies, as opposed to deductive strategy of analysis were used. This research began without an explicit conceptual framework; lack of a hypothesis in legal researches evidences the usefulness of this strategy. It used research questions outlined in Chapter 1 to guide the research.

Once the data were generated, an attempt was made to discover relationships or patterns through close scrutiny of the diversities of such data, its differences in terms of context and orientation and background of author. The data were thus analysed and interpreted through inductive abstraction and generalization. The result was a more conceptual framework of what affects transboundary water equity in the Okavango River Basin and what recommendations could be made.

2.5 Validity and reliability

"You can recognize truth by its beauty and simplicity," said Nobel Laureate, Richard Feynman.[71] It is in this relationship between truth and beauty that many researchers are beginning to recognise. As this research embarked on a generally non-researched topic in the context of the Okavango River Basin, care was taken to gather as much accurate data as possible. What Frankael and Wallen[72] say that investigating non-researched topics was noted. To make the study important, this study sought to make accurate conclusions out of data gathered from the studied case study and other cases studies all in the context of international water law and water relations.

In the context of the findings in this dissertation, it is important therefore to bear in mind that all conclusions that are reached on the basis of collected data, always involve legal induction and logical inference. The data have unavoidable inferences to be made from them. The question is thus whether the inferences that are drawn, and whether the conclusions that are reached, after considering such data are valid. As stated under the research paradigm and data analysis sub-topics above the methodological criterion that applies in this case, and subject limits of this research, is inferential validity.

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[71] Augros, R. and Stanciu, G. 1984. *The New Story of Science.* Lake Bluff, Ill. Regnery Gateway, p.39.

[72] Fraenkel, JR. and Wallen, N.E. 2000. *How to Design and Evaluate Research in Education.* Boston. McGraw-Hill.

Eisner[73] states that research that helps us understand a situation that would otherwise be enigmatic or confusing should be considered good research. In fact, according to Kvale,[74] in view of the two paradigms informing this research and data analysis being interpretative and interpretive paradigm and their constituent elements, validity and reliability are not regarded as the relevant criteria upon which to base the credibility of research. According to Hande[75]

> Validity and reliability as essential criteria for research are more suitable to the positivist paradigm which assumes there is a stable, observable reality. In this paradigm, validity deals with whether we measure or observe what we think we measure or observe and reliability deals with the possibility of replicating studies.

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[73] Eisner, EW. 1991. The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice. New York, NY: Macmillan Publishing Company, p 30-34

[74] Kvale, S. 1996. *The Social Construction of Validity in Interviews*. Thousand Oaks, CA: Sage Publications.

Lincoln, YS; and Guba, EG. 1985. *Naturalistic Inquiry*. Beverly Hills. Canada.

[75] Hende, 2009, *supra*, note 31, p.74

Hande goes on to quote Lincoln and Guba[76] and Guba and Lincoln[77] who for the reason in the quotation above, prefer to use the terms credibility, dependability and transferability as indicators of the trustworthiness of research results especially qualitative research. Thus, Bloor defines credibility, which corresponds to the notion of validity, as follows:

> The truth of analyses, their validity, is constituted by establishing some sort of correspondence between analysts and collectivity members' views of the world…one can establish a correspondence between the sociologists' and the members' view of the members' social world by exploring the extent to which members recognize, give assent to, the judgments of the sociologist.[78]

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[76] Lincoln and Guba, 1985, *supra*, note 66.

[77] Guba, E.G. and Lincoln, YS. 1989. *Fourth Generation Evaluation*, Newbury Park: Sage.

[78] Bloor, M. 1978. 'On the Analysis of Observational Data: A Discussion of the Worth and uses of Inductive Techniques and Respondent Validation.' *Sociology*, 12(2):542-52, p.545 quoted by Hende, 2009, *supra* note 31, p.74.

Dependability of data in the words of Schwandt is "the inquirer's responsibility for ensuring that the process of the inquiry was logical, traceable, and documented", [79] the provision of a 'thick' description of the study which is what this researcher felt were enough details for the specific chapters was a means to this end. In most Chapters below, a theoretical background to certain happenings and doctrines of law and politics is given against the fact being explored, its cause and effect and conclusions are made.

Transferability refers to "the inquirer's responsibility for providing readers with sufficient information on the case studied such that readers (can) establish the degree of similarity between the case studied and the case to which findings might be transferred".[80] Chapters 4 to 7 provide what researcher believes are enough details on his research data presentation, assumptions and biases vis-à-vis data.

Transferability is similar to generalisability which is regarded as the extension of research findings and conclusions from a study conducted on a sample population to the population at large. This research was not aimed at coming up with generalisable conclusions. It is up to users of this Dissertation to see whether the data contained herein can be generalised in their own contexts. After all, legal or critical and interpretative researchers in general

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79 Schwandt, TA. 2001. *Dictionary of Qualitative Inquiry*. Thousand Oaks, California: Sage Publications, p.258.

80 *Ibid*, p.258.

do not claim to have control over knowledge or to produce knowledge that is true for all contexts.

Even if one were to accept that the data were sufficiently reliable, the possibility remains that the data may not provide adequate support for the conclusions based on them. There is, for example, a possibility that other interpretations of the same events may be advanced,[81] thus an outsider may well be inclined to say that different conclusions hold in other transboundary water basins, had not been adequately refuted especially considering that no such research as present has been done in the Okavango River Basin. This will help in prompting research in such areas and especially research on quantitative data in the basin which can help in the quantification of the possible water shares, should the riparian decide to share water as noted in Chapter 8 below.

2.6 Limitations and Practical Lessons

The limitations of the mixed research method used herein are somewhat few but it is important to note that since the mixed approach uses more than research method in one research exercise, it was difficult for me to comfortably oscillate between qualitative and quantitative research methods and apply them concurrently. The result was that the research was more applying the qualitative than the quantitative research method as

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[81] Mouton, J and Marais, HC. 1988. *Basic Concepts in the Methodology of the Social Sciences*. Pretoria: HSRC Press, p.105.

already explained above. Further, a lot more time was spent in data analysis and interpretation since I had to carefully mix the methods and guard against compromising the validity of the outcome. However, this helped a lot in coming up with more reliable data since the strengths and weaknesses of both systems were offset in the process.

With the application of the mixed method approach, it was noted that the mixed methods research is an opportunity that deflects attention away from theoretical work that is often specific to particular disciplines and is quite true of what some authors on this subject have said.[82] This encouraged me not to only think of water law in the context of the Okavango River Basin and other basins across Southern Africa but also encouraged me to think 'outside the box' and interrogate theories of international relations in the context of international water law. This justifies the existence of Chapters 5 and 6 in this Dissertation where the politics of transboundary waters is considered in order to arrive at well informed answers to my research questions and well founded and feasible recommendations as contained in Chapter 8.

Knowing well that qualitative researchers have been criticised for over-emphasising the significance of interviews at the expense of document analysis and other aspects as ethnography and politico-economic issues, this study avoided interviews and went on to

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[82] Branne, J. 2005. *Mixed Methods Research: A Discussion Paper*. Institute of Education: University of London, p.5.

capitalise on desk research doing mainly document analysis. This was a useful aspect of the mixed approach because it made it possible to interrogate different authors by comparing them and checking the cross references and sometimes following the 'fights' that they fight in their publications. For example, it was quite clear that whereas there is a significant number of authors who subscribe to neo-Malthusian submissions of 'water wars', there is a faster growing number of writers[83] who refute the idea, this has given rise to several schools of thought in international water law which are elucidated in.

Literature is getting highly digitalised. The bigger libraries are now accessed over a computer set. There are e-books, old and new journals that are now digitalised making it

[83] Many of them will be explained in the literature review below. As examples here, see Ehrlich, P. 1968. *The Population Bomb*. New York: Ballantine. Meadows, DL. J Randers, and W.W. Behrens III, 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind.* New York: Universe Books. See also reports issued by the World Watch Institute – State of the World: produced annually since 1984; The World Commission on Environment and Development 1987. *Our Common Future*. The World Commission on Environment and Development. Gore, Al. 1992. *Earth in the Balance: Ecology and the Human Spirit*. Houghton Mifflin, Boston, MA and Hetsgaard, M. 1999. *Earth Odyssey*. Reprint Edition. Broadway Books.

very convenient for one to get the information without even visiting the library physically. However, accessing hard copies was a challenge.

2.7 Research ethics

This study is informed by legal research but it being multidimensional means that a social broadened framework was embraced with the realisation that the research involves humans and human institutions where legal and socio-economic and political questions and other varied questions always feature. So in this context caution was taken of various orientations and perceptions of writers in researches. Connected to this at all cost, respect for intellectual property was at the core and plagiarism or passing off of information as one's own was avoided.

However, that although ethics, codes, and principles in research are very important and useful, like any set of rules, they do not cover every situation that arises in research; they often conflict, and they require considerable interpretation. It became apparent that it was important to learn to interpret, assess, and apply various research rules and how to make decisions about how to act in various situations.

2.8 Summary

It has been shown that in accordance with the theoretical framework of the study, its methodology uses a number of different research paradigms and methods: on the one hand, the interpretative; and on the other the positivistic quantitative analysis. This mixed

method study attempts to bring together methods from different paradigms. The methodological basis of such diversity is in order to obtain the principle of triangulation, which is much recommended in qualitative research.[84]

Inductive reasoning was mainly used for qualitative data whereas deductive reasoning was applied to quantitative data although in this research the qualitative analysis methods held more sway especially in the presentation of data in the Dissertation as it stands. These methods have their strengths and weaknesses some of which indeed could not be avoided. The validity of the result however was not compromised.

[84] See generally, Wodak, R. and Meyer, M. (eds.) 2001. *Methods of critical discourse analysis*. London: SAGE publications Limited.

Chapter 3

Literature Review and Theoretical Framework

3.1 Introduction

A theoretical framework should be exposed by way of a literature review before the actual study and answering of research questions is embarked on. This is done to have a general understanding on what other scholars have dealt with in the area covered by the research identify a gap that one's study can fill. In this light, this Chapter presents the literature review and exposes the theoretical framework of the study. A theoretical framework refers to "the philosophical stance informing methodology and thus providing a context for the process and grounding its logic and criteria".[85] In this regard, this Chapter reflects again on the research topic which has been laid bare in Chapter 1 above and analyses literature that exists in the field and how it may be helpful in answering the stated research questions or at least provide clues or comparative analysis to what is specifically dealt with in this study.

Furthermore, the Chapter examines the context in which this study finds itself, starting by exposing some of the relevant findings in regard to equity in international law of

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[85] Crotty, M. (Ed.). 1998. *The Foundation of Social Research: Meaning and Perspective in the Research Process.* London: Sage Publications, p.3.

shared watercourses. The Chapter also presents an overview of the international debates in relation to concepts covered in this research. Reference to various research studies and literature in general and an analysis of such literature, serves to explore the past and current discussions triggered by the different authors.

For this literature review various sources have been accessed. These sources include traditional sources such as text books, published articles from refereed journals and unpublished works from different sources as well. Quite appropriately, the literature review refers to the growing fields of the accessible, dynamic and prolific sources found through the internet as well. The quoted internet sources include articles from online journals, published conference and workshop proceedings, un-refereed papers as well as open websites developed by various organisations.

The following literature review also touches on the quality of published work; interprets effects and highlights shortcomings and gaps in literature and research done by others elsewhere. Further, it provides a general organisation and patterns and combines both summary and synthesis of concepts in international law of watercourses. Depending on the topic, in some cases new interpretations of old material are given and or combinations of new and old interpretations of concepts and data are provided. And depending on the sub-topic, evaluations of the sources will be provided and advice on most pertinent or relevant principles or laws will be provided. Altogether, the purpose of this chapter,

therefore, is to provide an overview of the literature on the research questions and the stated problems outlined in Chapter 1 above.

3.2 Background to available literature

There exists extensive literature on transboundary water resources evidencing substantial experience of some authors in developing sources for conflict or co-operation management of transboundary river basins. However, much of this literature dwells on other river basins with very little covering Okavango River Basin. The literature which covers the Okavango River Basin on its own is also deficient in answering the research questions as stated in Chapter 1 above. It however gives some informative information and a pathway to the answering of the research questions.

Research on international water law started mainly in the mid of the 20th century. LeMarquand can be regarded as a researcher who pioneered systematic research on international water law. [86] LeMarquand was followed by a number of other researchers who published seminal works on various aspects of international water law. [87] Most of

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[86] LeMarquand, D. 1977: *International Rivers: The Politics of Cooperation*. Vancouver: Westwater Research Centre, University of British Columbia.

[87] Chapman, JD. (Ed.), 1963. *The International River Basin: Seminar in the Development and Administration of the International River Basin.* University of British Columbia, Vancouver. United Nations, 1975. *Management of International*

Water Resources: Institutional and Legal Aspects. New York: United Nations; Fox, IK. and DG. Le Marquand, HD. (Ed).1978. "International River Basin Cooperation. Water Development and Management" *Proceedings of the United Nations Water Conference*. Mar del Plata, Oxford: Pergamon Press; Vlachos, E., Webb, AC. and Murphy, IL. (Eds.) 1986. *The Management of International Rivers*. Laxenburg, International Institute of Applied Systems Analysis. Frey, FW. 1993. 'The Political Context of Conflict and Cooperation Over International River Basins.' *Water International,* 1993 (18):54–68; World Bank, 1993. *Water Resources Management*. World Bank, Washington D.C; Barrett, S. 1994. *Conflict and Cooperation in Managing International Water Resources*. World Bank Washington D.C.; Rangeley, R. 1994. *International River Basin Organizations in Sub-Saharan Africa*, World Bank, Washington D.C.; Kilgour, MD. and Dinar, A. 1995. *Are Stable Agreements for Sharing International River Waters now Possible?* World Bank, Policy Research Working Paper 1474, Washington D.C.; Ganoulis, J., Duckstein, L. Literathy P., and Bogardi, I. (eds.) 1996. *Transboundary Water Resources Management*. Springer, Berlin.; Nakayama, M. 1997. 'Successes and Failures of International Organizations in Dealing with International Waters.' *Water Resources Development* 1997 (13):367–382.; Elhance, AP. 1999. *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins.* US Institute of Peace Press, Washington D.C.; Shmueli, DF. 1999. 'Water Quality in International River Basins.' *Political Geography* 1999 (18): 437–76.; Beach, HL. 2000. *Transboundary Freshwater Dispute Resolution:*

the early pieces of literature focused mostly on hydropolitics[88] and were not as systematic as LeMarquand's work. Recent literature has largely been informed or inspired by the UN Convention on the Non-navigational Use of Transboundary Watercourses and often departs from the examination of principles in the conventions through the power structures of international river basins to the integration of groundwater into hydro politics research. Intensive studies on international

Theory, Practice, and Annotated References. Tokyo: United Nations University Press.

88 Elhance, A.1999. *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins.* Washington, DC: US Institute of Peace Press.

river basins include rivers in the Middle East[89] , Africa both Northern[90] and Southern Africa[91] Europe[92] and Asia.[93]

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[89] Lowi, M. 1993. *Water and Power*. Cambridge: Cambridge University Press; Kliot, N. 1993. *Water Resources and Conflict in the Middle East.* London: Taylor and. Francis, Wolf, A. 1995. *Hydropolitics along the Jordan River.* Tokyo: United Nations University Press; Dombrowsky, I. 1998. *The Jordan River Basin: Prospects for Cooperation within the Middle East Peace Process? Water in the Middle East: Potential for Conflicts and Prospects for Cooperation.* WS. Scheumann, M. Berlin, Springer Verlag, pp.91-112. Soffer, A. 1999. *Rivers of Fire: The Conflict over Water in the Middle East.* Lanham, MD, Rowman & Littlefield Publishers; Dolatyar/Gray 2000, Amery, H. 2002. 'Water Wars in the Middle East: A Looming Threat', *Geographical Journal*, 2002 168(4):313-323, Zeitoun, 2008, *supra* and the Euphrates-Tigris (for example *Elver, H. 2002, Peaceful uses of International Rivers. The Euphrates and Tigris Rivers dispute*. Ardsley, New York. Transnational Publishers, Inc. *Kibaroğlu, A. 2002*. *Building a Regime for the Waters of the Euphrates-Tigris River Basin*. Kluwer Law International, London, The Hague, New York., Scheumann, WSM. (Ed). 1998. *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation*. Berlin, Springer Verlag. Medzini, A. and A. Wolf. 2004. 'Towards a Middle East at Peace: Hidden Issues in Arab-Israeli Hydropolitics.' *International Journal of Water Resources Development*. 2004

20(2):193-204, Daoudy, M. 2008. 'Hydro-hegemony and International Water Law: laying Claims to Water Rights.' *Water Policy*, 2008 10(S2):89–102.

[90] Howell, P P. and Allan, JA., 1990. *The Nile: Sharing a Scarce Resource*. London: School of Oriental and African Studies. Waterbury, J. 2002. 'The Nile Basin: National Determinants of Collective Action.' *New Haven*, CT: Yale University Press. Whittington, D., Wu, X., and Sadoff, C. 2005. 'Water resources management in the Nile Basin: The economic value of cooperation.' *Water Policy*, 2005 (7):227–252.

[91] Almeida, L. 2002. *Hydropolitics in the Developing. World: A Southern African Perspective. AWIRU:* Pretoria*;* Henwood, R. and N.N. Funke, 2002. 'Managing Water in International River Basins in Southern Africa: *International Relations or Foreign Policy*.' In: Turton, A. and R. Henwood (Eds.), *Hydropolitics in the Developing World: A Southern African Perspective*. Pretoria: Centre for Political International Studies, University of Pretoria; Nakayama, M. (Ed). 2003. *International Waters in Southern Africa.* Tokyo and New York: United Nations University Press, Ashton, P., & Turton, AR. 2004. 'Transboundary Water Resource Management in Southern Africa: Opportunities, Challenges and Lessons Learned.' Paper presented at the *International Expert Workshop on Water, Development and Cooperation, Comparative Perspective*: *Euphrates-Tigris and Southern Africa*. Bonn International Conference Centre, 1-3 March 2004; Turton, A R. and A. Earle, 2004. 'An Assessment of the Parallel National Action Model as a Possible Approach for the Integrated Management of the Okavango River Basin.'

Deliverable D6.2 of the WERRD Project funded by the European Union. University of Pretoria.

[92] Heyns et.al. 2008. 'The Rhine. A study of inland water negotiations' in G. Sjöstedt (Eds.) *The Rhine. A Study of Inland Water Negotiations*. Newbury Park. California: Sage Publications; Nachtnebel, H. 2000, 'The Danube River Basin Environmental Programme: Plans and Actions for a Basin Wide Approach.' *Water Policy,* 2000 2 (1-2):113-30, Nolkaemper, A. 2005. 'The Evolution of the Regime for the River Rhine.' In: Subedi, SP. (ed.), *International Watercourses Law for the 21st Century, the Case of the River Ganges Basin*. Hapshire: Ashgate, McCaffrey, S. 2006. 'The Danube River Basin, Finger.' In M., Tamiotti, L. & Allouche, J. (Eds.) *The Multi-Governance of Water. Four Case Studies*. New York, pp.79-101; Lindemann S. 2008. 'Understanding Water Regime Formation—A Research Framework with Lessons from Europe.' *Global Environmental Politics,* 2008 8(4):117–40.

[93] Biswas, AK. 1996. Water for Sustainable Development of South and Southeast Asia in the Twenty- First Century. In: AK. Biswas and T. Hashimoto, *Asian International Waters: from Ganges– Brahmaputra to Mekong.* Bombay, Oxford University Press; Subedi, SP. 1999. 'The Hydro Politics of South Asia: The Conclusion of the Mahakali and Ganges River Treaties.' *American Journal of International Law.* 1999 (93) 4: 953-962. Biswas, AK. and Uitto, JI. (Eds). 2001. *Sustainable Development of the Ganges-Brahmaputra-Meghna Basins*. Tokyo: United Nations University Press; Zawahri, NA. 2008a. 'International Rivers and National Security: The

Most on the authors on the subject covered by this research attach useful bibliographies to their works.[94] Some publications are generic and are cited in a lot of other sources. Some short bibliographies exist on the World Wide Web and concentrate on various topics under the law of international water courses some of which are not of much

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Euphrates, Ganges-Brahmaputra, Indus, Tigris, and Yarmouk Rivers.' *Natural Resources Forum*, 2008 (32):280–289; Zawahri, N. 2008b. 'Designing River Commissions to Implement Treaties and Manage Water Disputes: The story of the Joint Water Committee and Permanent Indus Commission.' *Water International*, 2008 (33): 464–474; Kloetzli, S. 1997. "The 'Aral Sea Syndrome' and regional cooperation in Central Asia: Opportunity or Obstacle?", in Geditsch, N. (Ed) *Conflict and the Environment.* Kluwer, Dordrecht, pp.417-434; O'Hara, S., 2000. Central Asia's Water Resources: Contemporary and Future Management Issues. *Water Resource Development*. 2000 16(3): 423–441; Dukhovny, V. and Sakolov, V. 2002. 'International Arrangement to Manage the Aral Sea Basin', in Alaerts G. and LeMoigne, G. (Eds) 2002. I*ntegrated Water Management at River Basin Level*. Washington DC: World Bank.

[94] See for example Hitchcock, RK. 2010. 'Water resource use and management in the Okavango system of southern Africa: the political economy of state, community and private resource control', available at http://www.africanwater.org/hitchcockdoc1.htm. Last accessed on January 28, 2011.

importance or relevance to this study. Among the useful literature, some show how cooperation, rather than conflict, is the norm in international basins and how water provides opportunities for conflict prevention and peace and how to expand the pie of benefits for all basin states.

Some literature shows that water is a political issue and its allocation provokes hydro politics and conflictual relations. Transboundary water is thus a source of conflict as opposed to cooperation. This balance in literature generally indicates that the conflict and cooperation continuum is a result of a crude understanding of how transboundary water interactions have taken place or occur between riparian states. This provokes actual understandings of what is happening in Okavango as noted by Hitchcock.[95]

There is also substantial literature on transboundary water institutions. This literature focuses on various aspects of international institutions, including questions regarding how institutions are formed, how they co-ordinate their affairs in international river basins and how effective they are in the management of water resources in those basins.[96] The

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95 *Ibid.*

96 Burchi, S. 1985. 'Different Types of River Basin Entities: A Global Outlook.' In: Lundqvist, J. U. Lohm, and M. Falkenmark, 1985. *Strategies for River Basin Management: Environmental Integration of Land and Water in a River Basin*. Dordrecht, Boston and Lancaster, D. Reidel, International Workshop. 2000.

literature indicates that there are a number of obstacles which these institutions encounter in carrying out their various mandates. These obstacles include bad international relations,[97] lack of trust, conflicts of interests among nations, inconsistent facts and or

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'Guidelines and Recommendations on River Basin Management', in Mostert, E. 2000. *River Basin Management: Proceedings of the International Workshop.* The Hague, October 27–9 1999, pp.10–20 and pp. 293–8. UNESCO, IHP-V, Technical Documents in Hydrology, No. 31. Paris: UNESCO. Ganoulis, J., Duckstein, L. and Literathy, P. 1996. Transboundary Water Resources Management; Institutional and Engineering Approaches. NATO ASI Series, 2. *Environment, Vol*. 7. Berlin, Springer; Van Dam, JC. and Wessel, J. (Eds.) 1993. *Transboundary River Basin Management and Sustainable Development. Proceedings of a symposium*, Delft (the Netherlands), May 18–22 1992. Paris, UNESCO. 253-272; Vlachos, E., Webb, AC. and Murphy, I.L. (Eds.) 1986. *The Management of International River Basin Conflicts. Proceedings of a Workshop held at the Headquarters of the International Institute for Applied Systems Analysis*. Laxenburg, Austria, September 22–5 1986. Washington, D.C., George Washington University.

[97] Godana, BA. 1985. *Africa's Shared Water Resources: Legal and Institutional Aspects of the Nile, Niger, and Senegal River Systems*. London, Frances Pinter; and Boulder, Colo., Lynne Rienner.

statistics about the basin and financial constraints.[98] There is a general trend or understanding that transboundary water institutions are more likely going to create cooperative relations as opposed to conflictive relations as they can be used as tools for negotiation and mediation.[99]

A comparative report on seven major African river basins documents the outcomes of an assessment of rivers or lake basins organisations (R/LBOs) operating in seven major African basins: Nile River, Lake Chad, Niger River, Senegal River, Okavango, Orange River system and Zambezi River, and their institutional linkages in the context of integrated river basin management (IRBM). It states that there has been international

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98 Chenoweth, JL. and Feitelson, E. 2001. 'Analysis of Factors Influencing Data and Information Exchange in International River Basins: Can Such Exchanges be used to Build Confidence in Cooperative Management?' *Water International*, 2001 26(4): 499–512.

99 Botto, MP. 1999. 'The Amazon Cooperation Treaty: A Mechanism for Cooperation and Sustainable Development.' In: Biswas, AK. Cordeiro, NV. Braga BPF and Tortaradja C. *Management of Latin American River Basins: Amazon, Plata, and Sao Francisco*. Tokyo, United Nations University Press, pp. 68– 100; Faure, GO. 2001. 'Negotiation Over Water Rights: Cultural Issues', in Shamir, U. 2001. *Negotiation Over Water: Proceedings of the Haifa Workshop*, 1997, IHP-V/Technical Documents in Hydrology, No. 53. Paris, UNESCO, pp. 16–26.

cooperation and action plans. Some of such development is the establishment of the Africa Ministerial Council on Water (AMCOW) and its associated institutions and structure. [100] The Report goes on to mention that in order to facilitate transboundary cooperation a number of Supra-national River/Lake Basin Organizations (R/LBOs) have been created in Africa and continues:

> These institutions take various forms and may have a specific mandate. Related to the effectiveness and impact of R/BLOs are the linkages to national governments. There is recognition that the impacts of R/BLOs are hardly felt outside the confines of the parent sectoral ministries. National governments usually consist of different sectoral ministries, and there may be competing interests and different perspectives on issues. Similarly, differences may exist between national government and local government or communities; or between water users and national governments, for example. There is a need to build synergy between the various institutions to strengthen their linkages.[101]

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[100] Pietersen, K. and Beekman HE. 2008. *Strengthening Cooperation among River Basin Organizations: A Comparative Study Of the Linkages between River/Lake Basin Organizations and the Respective Cooperating National Governments in Seven Major African Basins*. Deutsche Gesellschaft für Technische Zusammenarbeit: Kampala.

[101] *Ibid*, p.i.

The report notes that each basin has its own characteristics and institutional arrangements. The institutions are central to the management of water resources and are crucial to the implementation of the principles of international law, particularly the principle of equitable use of transboundary water resources and the obligation not to cause harm in the management of transboundary water resources.[102] The Report is very useful for it breaks down some basic features of institutional and management structures of the major river basins in Africa.

Further, the Report is very important in so far as it summarises the basic facts about the major river basins in Africa. It forms a basic tool for a comparative analysis of transboundary river basins. The Report however is not so useful in directly answering the research questions outlined in Chapter 1 above. The major weakness also is that this Report is based on existing literature and extensive web searches which yielded mostly indirect information on R/LBO linkages with national governments and concentrates more on assessment of the mechanisms for linking R/LBOs to national policies and programmes. Therefore, it does not adequately touch on transboundary water equity and the enquiry about whether states are moving towards co-operation as opposed to conflict.

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[102] *Ibid.*

This report shows that there are growing calls for co-operation among the basin states to optimise the use of water resources and for development of a basin-wide long term planning programme, including financial compensation, contribution to the costs of the works or even reduction in the scale of development to ensure equity.

3.3 International Regulatory framework

International legal instruments and available literature show the general parameters of water management including cooperation promotion and conflict resolution. Literature which has developed commenting on these laws does not only concentrate on their provisions but also the application of specific principles enshrined therein to particular issues in international river basins. Some of the laws have developed as soft law and some have developed as customary international law emanating from inter-state treaties.[103]

Existing literature shows that transboundary water courses have been the subject of regulatory efforts for centuries. The Emperor Justinian, in around 500 CE enacted edicts which regulated how nations within his empire could relate in so far as the uses of transboundary watercourses were concerned. Specifically Justinian stated that "the public use of the banks of a river is part of the law of nations…But the banks of a river are the

[103] UN ECE. 2000. *Guidelines on Monitoring and Assessment of Transboundary Groundwaters*. Lelystad, UN ECE.

property of those whose land they adjoin; and consequently the trees growing on them are also the property of the same persons."[104]

Modern regulation of international watercourses is done through state negotiations leading to the enactment of Conventions which contain both procedural and substantive rules in regard to transboundary water equity. Article 2(a) of the 1997 Convention on the Law of Non-Navigational Uses of International Watercourses, defines "watercourse" as "a system of surface waters and groundwater constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus." Components of a watercourse include rivers, lakes, aquifers, glaciers, reservoirs and canals. The ILC notes that, "so long as these components are interrelated with one another, they form part of the watercourse."[105] Even though it has not come into force, this convention is the primary statutory source of international water law.[106]

Before international water law principles found their way into an officially adopted Convention of the United Nations, its principles were scattered in international customary

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[104] Halsall, P. 1998. 'Medieval Sourcebook: The Institutes: 535 CE,' available at http://www.fordham.edu/halsall/basis/535institutes.html. Last accessed 01 April 2011.

[105] International Law Commission 2003, *supra,* p.90.

[106] *Ibid.*

law and in bilateral and multilateral water agreements. The first attempt at coming up with a Convention was in 1923 with the unsuccessful 1923 Geneva Convention Relating to the Development of Hydraulic Power Affecting more than One State. This Convention was ratified by a mere eleven states, and though used in some arbitral awards during that time, it was of little or no influence at all.[107]

Soon after World War 2 there were serious disputes over international river courses across the world. These disputes led the relatively new International Law Commission (ILC) then to work on a project to come up with universal rules governing international watercourses. These efforts led to the promulgation of the Helsinki Rules in 1966 which later became a convention, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes in 1992 which expressed the position of the ILA's thoughts on the subject. Thereafter, the ILA amplified the rules and the project continued until the UN Convention on the Non-Navigational Uses of International Water Courses was adopted in 1997. This Convention incorporated a lot of principles which were found

[107] See UN/United Nations. 1994. 'The Report of the Secretary General: Legal Problems Relating to the Utilization and Use of International Rivers, U.N. Doc. A/5409, 119741 2', *Yearbook of the International Law Commission* 1974(33). See also Sevette, P. 1952. *Legal Aspects of Hydro-Electric Development of Rivers and Lakes of Common Interest,* U.N. Doc. E/ECE/136, p.153.

in the Helsinki Rules. One such important principle is the principle of equitable use which forms the crux of this study.

As shall be shown in more detail below several authors trace principles of international water law as developed from the 1950s and explain their efficacy or lack thereof. Some very comprehensive texts on pre-Convention International Environmental law were published in two successive special volumes of the *Natural Resources Journal*.[108] The

[108] See, Haeuber, R.1996. 'Setting the Environmental Policy Agenda: The Case of Ecosystem Management.' *Natural Resources Journal*. 1996 36(1): 1-28; Howe, CW. 'Water Resources Planning in a Federation of States: Equity versus Efficiency.' *Natural Resources Journal*, 1996 36(1):29-36; Klein-Robbenhaar, J F. 1996. 'Balancing Efficiency with Equity: Determining the Public Welfare in Surface Water Transfers from Acequia Communities.' *Natural Resources Journal*, 1996 36(1):37-58; Melton, Jr. BF. 1996. Eminent Domain, "Public Use," and the Conundrum of Original Intent.' *Natural Resources Journal*, 1996 36(1):59-86. Harvey, HR. 1996. Florida Game and Fresh Water Fish Commission v. Flotilla, Inc.' *Natural Resources Journal*, 1996 36(1):87-102; Hoffman-Dooley, S. 1996. 'Determining what is in the Public Welfare in Water Appropriations and Transfers: The Intel Example.' *Natural Resources Journal*. 1996 36(1): 103-126; Swazo, S. 1996. 'The Future of High-Level Nuclear Waste Disposal, State Sovereignty and the Tenth Amendment: Nevada v. Watkins.' *Natural Resources Journal*, 1996 36(1):127-144; Ingram, H. 1996. 35th

Articles contained in these special issues of the Journal trace the development of international water law, its shortcomings and strengths. The articles therein also analyse

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Anniversary of the Natural Resources Journal', *Natural Resources Journal*, 1996 36(1): 145-149; Utton, A.E.1996. Regional Cooperation: The Example of International Waters Systems in the Twentieth Century. *Natural Resources Journal*. 1996 36(2):151-154; Bourne, CB. 1996. 'The International Law Association's Contribution to International Water Resources Law', *Natural Resources Journal*. 1996 36(2):155 -218; Dellapenna, JW. 'Rivers as Legal Structures: The Examples of the Jordan and the Nile', *Natural Resources Journal*. 1996 36(2):217-251; Lilian Del Castillo LaBorde. 1996. 'Legal Regime of the Rio de la Plata.' *Natural Resources Journal*. 1996 36(2):251-296; McCaffrey, S C. 1996. 'An Assessment of the Work of the International Law Commission', Natural *Resources Journal*. 1996 36(2):297-318; Moore, MR. Mulville, A. and Weinberg, M. 1996. 'Water Allocation in the American West: Endangered Fish Versus Irrigated Agriculture', *Natural Resources Journal*, 1996 36(2):319-358; Teclaff, LA. 'Evolution of the River Basin Concept in National and International Water Law.' *Natural Resources Journal*. 1996 36(2):359-392; Vinogradov, S. 1996. 'Transboundary Water Resources in the Former Soviet Union: Between Conflict and Cooperation.' *Natural Resources Journal*. 1996 36(2):393-418; Wouters, PK. 1996. 'An Assessment of Recent Developments- in International Watercourse Law through the Prism of the Substantive Rules Governing Use Allocation', *Natural Resources Journal*. 1996 36(2):419-439.

the provisions in the Draft Articles which preceded the adoption and consider the relationship between the principle of equitable utilisation and the obligation not to cause harm to the other riparian states. In a previous publication McCaffrey[109] already did similar analyses on the Draft Articles. This earlier publication shows the different positions in the interpretation of the two major principles in the Draft Articles by different international bodies. There are many other useful texts which comment on the preceding documents to the Convention from various perspectives.[110]

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[109] McCaffrey, S. 1993. 'Water, Politics and International Law', in Gleick, P. (Ed.) 1993. *Water in Crisis*. Oxford: Oxford University Press.

[110] See Caponera, DA. 1985. 'Patterns of Cooperation in International Water Law: Principles and Institutions', Natural *Resources Journal.* 1985 25(4):563-588*;* Dellapenna, J. 1994. 'Treaties as Instruments for Managing Internationally-Shared Water Resources: Restricted Sovereignty vs. Community of Property.' Case *Western Reserve Journal of International Law.* 1994 (26): 27-56; Fox, IK. and LeMarquand, D.G. 1979. 'International river basin co-operation: The lessons from experience.' *Water Supply & Management.* 1979 2 (6): 9-27. FAO/Food Agricultural Organisation. 1997. Treaties Concerning the non-navigational use of international watercourses: Africa. FAO Legislative Study No. 61. Rome; Food and Agricultural Organization of the United Nations, Godana, B. 1985. '*Africa's Shared Water Resources: Legal and Institutional Aspects of the Nile, Niger, and Senegal River Systems.'* Geneva, Graduate Institute of International Studies; UN/United Nations.

After almost three decades of rule formulation and negotiations among states, the United Nations adopted the Convention on the Non-Navigational Uses of International Water Courses in 1997. This is the basic law governing international freshwaters including, of course internationally shared watercourses. This Convention is to be hailed for putting to rest the controversies that surrounded the principle of territorial sovereignty and the principle of absolute territorial integrity. These principles will be discussed in more detail in the chapters below. In the place of old unfair principles, the Convention introduced the principle of equitable utilisation and the obligation not to cause significant harm. These principles are explained in brief below and broader explanations will be given in the context of Okavango River basin legal regime analyses in Chapter 7 below.

1984. Treaties concerning the utilization of international water courses for other purposes than navigation, Africa 56. Natural Resources / Water Series No. 13, New York, NY. [or U.N. Doc. St/ESA/141]. Wescoat, JL., Jr. 1992. 'Beyond the River Basin: The Changing Geography of International Water Problems and International Watercourse Law', *Colorado Journal of International Environmental Law and Policy,* 1992 (3): 301-330. White, GF. 1957. A Perspective of River Basin Development. *Law and Contemporary Problems.* 1957 22(2): 157.

One of the most comprehensive books on the Convention is by Tanzi and Arcari.[111] This book considers the history of the development of international water law leading to the adoption of the Convention. It then analyses the provisions of the convention and the principles that arise of those provisions. The major principles analysed by the book include the equitable utilisation principle and the principle not to cause harm to the other. The book takes the stance that these principles are not competing with each other as some authors have propounded but that they are part of the same normative setting. Specific rules regarding environmental protection of internationally shared watercourses are given separate treatment where water is regarded as an indivisible entity needing cooperative efforts and where disputes are supposed to be solved through negotiated settlements.

Interestingly Tanzi and Arcari argue that while economic factors play an important role in the equitable utilisation of water resources, environmental factors play an important role as well especially in regards to the freedom of exploiting water resources in the shared watercourses. The fact that states are obligated not to cause harm to the other means that issues such as pollution management take centre stage when upstream riparians use the water in a shared watercourse. To this end the authors argue that even if

[111] Tanzi, A. and Arcari, M. 2001. *The United Nations Convention on the Law of International Watercourses: A Framework for Sharing.* London: Kluwer Law International.

the Convention has not entered into force, it remains informative in local instruments which many states have entered into after it was adopted.[112]

Salman and Uprety[113] hail the Convention as a modern piece of international legislation which replaces several attempts to arrive at rules and laws in the past 200 years. This book analyses five major bilateral treaty regimes on the South Asian sub-continent and explains the background and legal regimes of these international rivers.[114] This explanation is done in the context of the challenges which countries such as India, Pakistan, China and Bangladeshi are experiencing.

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[112] *Ibid.*

[113] Salman, M., A. Salman and K. Upretti, 2002. *Conflict and Cooperation on South Asia's International Rivers: A Legal Perspective*. Washington, DC: The World Bank. See also McCaffrey, S. 1999. 'International Groundwater Law: Evolution and Context.' In: Salman, S. (ed.), *Groundwater: Legal and Policy Perspectives*. Proceedings of a World Bank Seminar, World Bank Technical Paper N456.

[114] See for example Votrin, V. 2003. 'Transboundary Water disputes in Central Asia: Using indicators of water Conflict in identifying Water Conflict Potential.' Vrije Universiteit Brussel, Master's Thesis.

McCaffrey[115] provides a comprehensive review of the process leading to an analysis of the content of the 1997 Convention. This is mainly done in a full Chapter 7 devoted to the Convention which also goes on to examine the factual and legal context in which the Convention should be understood. The book picks up salient parts of the Convention and analyses them in more detail and tries to show their application at basin level. This book is thus relevant to this study for it provides some detailed analysis of a Convention that is also considered key in this study. It is also key in that it shows that the equity concepts behind the 1966 Helsinki Rules and the 1997 United Nations Convention on Non-Navigational Uses of International Watercourses have had a tangible impact on basin level agreements. This influence of international instruments is evident in the OKACOM Agreement.

Subedi,[116] analyses the Convention and highlights the challenges which exist in applying it at basin level. This analysis is done from a comparative view of the Ganges Basin[117]

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[115] McCaffrey, S.C. 2001. *The Law of International Watercourses: Non-Navigational Uses*. Oxford University Press.

[116] Subedi, SP. 2005. *International Watercourses Law for the 21st Century. The Case of the River Ganges Basin.* Hapshire: Ashgate.

[117] See some analyses in Rahaman, MM. 2009. 'Integrated Water Resources Management: Constraints and Opportunities with a focus on the Ganges and

with the Rhine and Mekong Basins. The book also touches on various cross-cutting issues which are not so relevant to this study. More relevant to this study is its advocacy for need for regional cooperation between the riparian countries of the Ganges for its sustainable development and management the overall understanding being that it is good to have a signed water agreement, and all concrete arrangements should be filled in at individual river basin level among countries involved. The case studies considered in this text also provide an idea of how other international river basin institutions are functioning, hence can inform part of the recommendations contained in Chapter 8 below.

With regard to equity, most literature shows that even if the Convention exists, there remain challenges to international water law. International legal principles regulating internationally shared watercourses are generally elusive. This may be an indication of the difficulties that arise in marrying legal and hydrologic principles. This is evidenced by the 1997 Convention on the Non-Navigational Uses of International Watercourses which took 27 years for the International Water Law Commission to finalise.

Brahmaputra river Basins', unpublished Ph.D. Dissertation. Helsinki University of Technology.

The Convention is contradictory in its terms. Whereas it provides for 'equitable use' it also provides for the 'obligation not to cause appreciable harm'. According to Wolf:

> These two principles are in implicit conflict in the setting of an international waterway: up-stream riparians have advocated that the emphasis between the two principles be on "equitable use," since that principle gives the needs of the present the same weight as those of the past. In contrast, down-stream riparians have pushed for emphasis on "no significant harm," which effectively protects the pre-existing uses generally found in the lower reaches of most major streams.[118]

One most important guideline provided for in the Convention is how states can make allocations. This is an important part of the Convention because statistics on the causes of water conflicts has shown that allocations are the major cause of conflicts in internationally shared water courses.[119]

An additional recognisable weakness in international law is that it mainly concerns itself with rights and obligations of states. This means that some international bodies which are not regarded as states cannot claim water rights in internationally shared watercourses.

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[118] Wolf, AT. 1998. 'Conflict and Cooperation along International Waterways', *Water Policy*. 1998 (1)2: 251-265, p.3.

[119] Ibid, p.3.

Further, in cases where a conflict has arisen, states can have resort to the International Court of Justice (ICJ) only by consent. Another problem comes in with the intricacies involved in the enforcement of the judgments of the ICJ. The ICJ itself has decided only one case of transboundary water conflict since 1946.[120] There are many other useful texts which comment on the Convention from various perspectives.[121]

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[120] *Case concerning the Gabcíkovo-Nagymaros Project Hungary/Slovakia).* International Court of Justice: Judgment. 25 September 1997.

[121] Tanzi, A. 2000. 'The Relationship between the 1992 UN/ECE Convention on the Protection And Use of Transboundary Watercourses and International Lakes and The 1997 UN Convention on the Law of the Non-Navigational uses of International Watercourses', *Report of the UN/ECE Task Force on Legal and Administrative Aspects*. Geneva. Schroeder-Wildberg, E. 2002. The 1997. *International Watercourses Convention Background and Negotiations.* Berlin: Technical University of Berlin. Sadoff, CW. Whittington, D. and Grey, D. 2002. Africa's International Rivers: An Economic Perspective. Washington, D.C: The World Bank; Mitchell, RB. 2003. 'International Environmental Agreements: A Survey of Their Features, Formations, and Effects.' *Environmental Resources Journal,* 2003 (28): 429-461. Mechlem, K. 2003. *Water as a Vehicle for Inter-State Cooperation: A Legal Perspective*. FAO Legal Papers Rome; Food and Agricultural Organization of the United Nations; Hirji, R. and Grey, D. 1998. 'Managing International Waters in Africa: Process and Progress.' In. Salman SM and LBD. Chazournes (Eds), 1998.

At local level, in modern days transboundary watercourses have been regulated mainly by treaties. From 805AD to 1984 there were more than 3, 500 transboundary water treaties concluded among and between nations.[122] Regarding conflict, literature exists which indicates that transboundary water resources have caused conflict. A wide range of conflicts over water appears throughout history, though very rarely are these "wars" over water. Instead, access to water has been a source of tensions, a tool during conflicts

International Watercourses: Enhancing Cooperation and Managing Conflict. Proceedings from a World Bank Seminar. World Bank. Washington DC: World Bank. Hey, E., 1998. 'The Watercourses Convention: To What Extent does it Provide a Basis for Regulating Uses of International Watercourse?', *Review of European Community and International Environmental Law* 1998 7(3): 291-300; Giordano, MA. and Wolf, AT., 2003. Sharing Waters: Post-Rio international water management. *Natural Resources Forum*. 2003 (27): 163-171. Beaumont, P. 2000. 'The 1997 UN Convention on the Law of Non-navigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines', *Water Resources Development* 2000 16(4) 475-495.

[122] UN Water, 2009. *World Water Day 2009.* UN Water.

that start for other reasons, and a target during wars.[123] Gleick demonstrates in his Water Conflict Chronology from 3000BC to the present, which documents nearly 200 distinct water conflicts that occurred around the world.[124]

Just like most international treaties, transboundary treaties in existence today are largely deficient in prescriptions for enforcement measures let alone prescriptions on sanctions for breach. This seems to be mainly because of the reluctance of nations to give up some of their sovereignty hence most existing treaties are toothless agreements which present problems should conflict arise needing resolution.

As Held[125] says, this creates even a bigger problem when nations lack enough motivation to enforce or apply the agreement and start acting in their own self interests in the regulation of public goods, such as water resources in this context. This reflects Garrett Hardin's tragedy of the commons model, in which each individual seeks his own best interest by using common pool resources until they are depleted. Generally, Held

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[123] Gleick, PH. 1993. 'Water and Conflict: Fresh Water Resources and International Security', *International Security.* 18 (1):79-112. p79.

[124] Gleick, P. 2011. 'Water Conflict Chronology,' available at http://www.worldwater.org/conflictchronology.pdf. Last accessed 03 February 2011.

[125] Held, D. 2004. *Global Covenant: The Social Democratic Alternative to the Washington Consensus*. Cambridge: Polity Press, p.90.

recommends "the development of law enforcement and coercive capability," empowering inter-state institutions with the effective tools to regulate the shared resource.[126] A general reading and review of transboundary water agreements in Southern Africa including OKACOM leads to the conclusion that, while there are some positive signs, considerable work remains to be done in order to produce practical mechanisms designed to effectively and efficiently balance the need for development with the need to protect the environment.

There indeed exists some literature on trends in international water management and international development[127] and an appreciable growing body of research on conditions in Africa's transboundary waters.[128] However there was no work which systematically

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[126] Hardin, G. 1968. Science, New Series, 1968 (162): 1243-1248, p.1244.

[127] World Commission on Dams. 2000. *Dams and Development a New Framework for Decision-Making*. The Report of the World Commission on Dams. Earthscan, London; Hajer, M. 1996. *The politics of environmental discourse: ecological modernization and the policy process*. Oxford: Clarendon Press; Saleth, R.M. and Dinar, A. 2000. 'Institutional Changes in Global Water Sector: Trends, Patterns, and Implications', *Water Policy* 2000(2):175-199.

[128] Godana, B. 1985. *Africa's Shared Water Resources: Legal and Institutional Aspects of the Nile, Niger, and Senegal River Systems*. Graduate Institute of International Studies: Geneva; Hirji, R. and Grey, D. 1998. 'Managing International Waters in

examines the Okavango river basin or at least addresses specific research questions in this study in the context of Africa. As outlined in Chapter 1, this study sought to partially fill this knowledge gap.

Africa: Process and Progress', in Salman SM. and L.B.D. Chazournes, (Eds), *International Watercourses: Enhancing cooperation and managing conflict*. Proceedings from a World Bank Seminar. World Bank. Washington, D.C; Ilomaki, J. 1999. *Institutional Challenge of Developing Transboundary Water Resources*. Helsinki University of Technology. Master of Science Thesis; IUCN. 2004. Okaru-Bisant, V. 1998. 'Institutional and Legal Frameworks for Preventing and Resolving Disputes Concerning the Development and Management of Africa's Shared River Basins', *Colorado Journal of International Environmental Policy*. 2004 (9):2; Rangeley, Robert, Bocar M. Thiam, Randolf A. Andersen and Colin A. Lyle. 1994. *International River Basin Organizations in Sub-Saharan Africa*. World Bank Technical Paper Number 250. Africa Technical Department Series. The World Bank. Washington, D.C; Sadoff, C.W., Whittington, D., and Grey, D. 2002. *Africa's International Rivers: An Economic Perspective*. The World Bank, Washington, D.C; UNECA, 2000. *Transboundary River; Lake Basin Water Development in Africa: Prospects, Problems and Achievements*. UNECA: Addis Ababa.

One paper which touches on relevant questions to this study on this aspect is the one by Lautze, Giordano, and Borghes.[129] The paper considers the driving forces behind African transboundary water law. Although the focus of the paper is different, it is noteworthy that after showing African Statistics, the authors have some significant findings to share, which findings indicate that a range of factors have driven transboundary water law in Africa in the post-colonial period. Internally, these factors include joint management, water development, and water sharing and division.

Externally, they have included a range of factors emanating largely outside the African continent including geopolitics, the concept of hydraulic mission, cultural ties, international environment agendas, and global concern with water conflicts.[130] The results show an evolutionary change in the way these external factors have influenced African transboundary water law. More importantly, analysis of the way internal and external drivers interact suggests that both must be considered by basin states and the outside actors if either is to achieve their objectives.[131]

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[129] Lautze, J, Giordano, M and Borghes, M. 2005, *supra*, note 134, p.26.

[130] *Ibid.*

[131] *Ibid.*

Africa has a long history of transboundary water management and a voluminous body of transboundary water law, which at least partially regulates the use of many of its basins.[132] While an understanding of the scope and nature of the continent's transboundary water law supplies an important tool to improve future management of the its shared waters, an examination of the factors which have driven the formation, orientation, and realization of that law can help to understand both why it evolved, in whose interests, and the likelihood for its meaningful implementation.

3.4 Exposition of statistics

Statistics about internationally shared watercourses are well documented and significant literature exist which is consistent on these statistics. It is well documented that some 40% of the world's population live within international river basins and over 90% of the world's population live in countries that share international rivers.[133] According to Wolf UNEP, UNESCO and Bernauer, there are more than 260 international watercourses in the world and are shared by 145 states. According to UNESCO and UNEP, these shared

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[132] *Ibid*.

[133] Sadoff, C. and Grey, D. 2002. 'Co-operation on International Rivers: A Continuum for Capturing Benefits', in Saskia C. (Ed). 2002. *Proceedings of the International Conference: From Conflict to Co-operation in International Water Resources Management: Challenges and Opportunities*. 20-22 November 2002. UNESCO-IHE Institute for Water Education Delft: The Netherlands, p.85.

river basins cover more than 45% of the Earth's surface and they account for about half the world's freshwater. Further, about 45.3% of the global land area lies in transboundary river basins and 40% of the world population lives in such basins. Transboundary watercourses provide 60% of the global river runoff.

In Africa, international river basins cover 62 percent of the continent's land mass.[134] Africa has a long history of transboundary water management and a voluminous body of transboundary water law, which at least partially regulates the use of many of its basins.[135] However, about one third of the African population amounting to about 300 million people lives under a situation of water scarcity.[136] It is projected that by 2025 half of African countries will experience water stress and the sharing of water will play a

[134] Lautze, J, M Giordano, and M, Borghes, 2005. 'Driving Forces behind African Transboundary Water Law: Internal, External, and Implications.' *International Workshop on African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa.* Johannesburg, South Africa, 2005.

[135] *Ibid.*

[136] See Tafesse, T. 2001. *The Nile Question. Hydropolitics, Legal Wrangling, Modus Vivendi and Perspectives.* Munster. Lit Verlag, p.x.

significant role in inter-state relations amidst a combination of population growth and recurrent drought and famine in some parts of the continent.[137]

There are also statistics regarding transboundary water agreements. According to UNEP[138] international water treaties date as far back as 2500BC when Lagash and Umma resolved a water dispute along the Tigris River through agreement. UNEP identifies more than 3600 international water treaties dating from ad 805 to 1984. The United Nations Food and Agricultural Organization (FAO) has also counted more than 3600 treaties on international water issues between the years AD 805 and 1984. Wolf[139] has counted around 300 international treaties on non-navigational issues of water management, flood

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[137] Klare, M. 2002. *Resource Wars. The New Landscape of Global Conflict* New York: A Metropolitan/Owl Book, p.157.

[138] See generally, UNEP/OSU (United Nations Environment Programme and Oregon State University). 2002. *Atlas of International Freshwater Agreements*. Nairobi, Kenya: UNEP Press.

[139] See generally, Food and Agricultural Organisation of the United Nations/FAO. 1978. *Systematic Index of International Water Resources Treaties, Declarations, Acts and Cases, by Basin*. Food and Agriculture Organization of the United Nations, Legislative Study 15, Rome. Wolf, A.1997. 'International Water Conflict Resolution: Lessons from Comparative Analysis', *International Journal of Water Resources Development*. 1997 (13): 3 333 – 366.

control, hydroelectric projects, and allocations for consumptive and non-consumptive uses of international rivers since 1945.

Given the statistics above regarding international watercourses with one or more other nations, conflict is inevitable. McCaffrey[140] investigates water, politics and international water law in the context of conflicts. He takes account of these disputes in their socio-political and geopolitical contexts and shows that where water crosses national boundaries, the use of an international watercourse in one state might have a significant social, economic or environmental impact in another state, hence conflicts or tensions over the uses of these international watercourses occur and have occurred in many parts of the world.

Regarding conflicts, there are a number of databases summarising water conflicts throughout the World. An example of a comprehensive database is the Transboundary Freshwater Dispute Database in the Department of Geosciences at the Oregon State

[140] McCaffrey, S. 2003. *The Law of International Watercourses: Non-Navigational Uses.* Oxford, UK: Oxford University Press. See also McCaffrey, SC. 2002. 'Water Disputes Defined: Characteristics and Trends for Resolving them' in, Resolution of International Water Disputes, 2002. Kluwer Law International November.

University.[141] This database includes information on 3,600 events involving confrontation or agreement from 1820 onwards classified on a numerical scale from war (–7) to unification (+7). There is essential information on more than 400 international freshwater agreements and basic information on climate, land cover, population, gross domestic product, irrigated areas, dam density, and water stress.[142] An extensive annotated bibliography was also developed by Beach and others. [143] Some time ago there have not been comprehensive multidisciplinary studies and analyses of transboundary water conflicts but this book provides just that. It is thus useful to the answering of the stated research questions above.

A few examples of inter-state conflicts over watercourses found in literature can be mentioned here: in the Middle East, Israel and Jordan's dispute over the Jordan River has resulted in Israel bombing a Jordanian dam project and occupying the headwaters in Syria

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[141] Oregon State University. 2010. The Program in Water Conflict Management and Transformation (PWCMT). Available athttp://www.transboundarywaters.orst.edu. Last accessed 23 September 2010.

[142] Wolf, AT. 1999. Criteria for Equitable Allocations: The Heart of International Water Conflict. *Natural Resources Forum*, 23(1): 3–30.

[143] Beach, L., Hamner, J., Hewitt, J., Kaufman, E., Kurki, A., Oppenheimer, J., and Wolf, AT. 2000. *Transboundary Freshwater Dispute Resolution: Theory, Practice, and Annotated References.* Tokyo and New York, United Nations University Press.

and Lebanon,[144] Israelis and the Palestinians also dispute their respective rights and obligations over shared aquifers.[145] Turkey's major hydro-electric scheme on the Tigris-Euphrates has threatened to deprive Syria and Iraq of vital water supplies.[146] In 1989, Turkey threatened to restrict the flow of the Euphrates because of Syria's support of the Kurdish independence movement.[147] A planned US$ 120 billion project by India to divert one-third of the Brahmaputra river waters annually to its northern and southern regions,

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[144] Karner, MA. 2012. "Hydropolitics in the Jordan River Basin: The Conflict and Cooperation Potential of Water in the Israeli-Palestinian Conflict", Trinity College Dublin, Master's Thesis; Rieu-Clarke, AS. 2004. *A fresh approach to international law in the field of sustainable development: what lessons from the law of international water courses?* PhD International Water Law and Policy International Water Law Research Institute University of Dundee. Available at discovery.dundee.ac.uk/.../A%20fresh%20approach%20to%20international%20law%20in%20the%20. Last accessed 20 August 2010. See also Anon, "Water in the Middle East: As thick as blood", The Economist, Dec. 23, 1995.

[145] Dempsey, J. 1999. '"Equitable" Division of Water a Vexed Issue.' *Financial Times*, 9 November 1999, p.15.

[146] Rieu-Clarke, AS. 2004, *supra,* note 144. Anonymous, 1999. 'Sharing Mesopotamia's Water: The Euphrates and and Tigris River Divided', *The Economist*, November 13 1999.

[147] *Ibid.*

would allegedly have grave consequences for water shortages in Bangladesh.[148] In Europe, the Danube is the source of an ongoing dispute between Hungary and the Slovak Republic in connection with reconciling the economic interests of electricity generation and the satisfaction of essential environmental concerns.[149]

3.5 Conflict or Cooperation?

3.5.1 General orientation of available literature

As highlighted in the general background to available literature above, there exists a significant balance in the amount of literature regarding conflict and cooperation in transboundary water law. This literature shows generally that both cooperation and conflict are as political as they are socio-economic and legal issues. In other words, transboundary water has to be treated from a multidisciplinary perspective. Some works show that relations between various interest groups resemble a variety of rules, norms, and a wide spectrum of political interest, all of which lead to cooperative ambience.[150] Analyses of conflicts and cooperative solutions suggest that water is a source for conflict, but it can also be a good reason for cooperation. [151]

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[148] Rieu-Clarke, AS. 2004, *supra,* note 144. Anonymous, 2003. 'Crisis Looms as India Plans Water Diversion', *The Daily Star*. Dhakar. Bangladesh April 7 2003.

[149] *Ibid*.

[150] Stein, AA., 1990. *Why Nations Cooperage*. Cornell University Press, Ithaca.

[151] *Ibid*, p. 46.

Most of the literature on conflict tends to characterise militarised confrontation or deterioration in political relations. Below is an exposition of literature which shows that this widely held view is opposed by those authors who have come to a narrower definition of conflict which departs from high politics. Definitions of cooperation also have their problems in that most authors consider the signing of transboundary water agreements as an indicator of cooperation. Further it will be indicated that this perception is opposed again by a few who follow the line of argument that the signing of a treaty in itself can be the start of conflict or can be an indicator of conflict which existed and continues to exist through implementation or lack thereof. More recent literature is developing which identifies these weaknesses and argues that states sharing international rivers confront a management problem, which involves continuous disputes that require constant negotiations.[152]

Further, how states manage their water disputes is an indicator of whether they exist in a condition of conflict, or cooperation. Therefore, there are no hard and fast criteria which

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[152] Gleditsch, NP., Kathryn, F., Håvard, H., Bethany, L., and Taylor, O., 2006. 'Conflicts over Shared Rivers: Resource Scarcity or Fuzzy Boundaries?', *Political Geography* 25. Wolf, AT., 1998. 'Conflict and Cooperation along International Waterways.' *Water Policy* 1998 1(2): 251–265.

show whether states are cooperating or not, it all depends on the interactions and factors affecting same in a specific transboundary river basin.

There has been significant literature on the dynamics of water management in the Nile and the Jordan River.[153] This growth of literature may be attributable to the fact that the countries sharing these rivers are generally under water stress and there has been political upheaval especially in the Middle East with enemy states such as Israel and Palestine sharing the same river. This literature is very useful in so far as it stands as informative comparative material.

Some authors have developed bibliographies and short literature reviews on some African river basins. Some of the literature on Africa focuses on the Nile. One such piece is by

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[153] Ahmed, A.A. and Eldaw AK. "Challenges and Future Opportunities in the Nile Basin", in, Castelein, S. (Ed), 2002. *From Conflict to Co-operation in International Water Resources Management: Challenges and Opportunities.* International Conference 20-22 November 2002 UNESCO-IHE Institute for Water Education Delft, The Netherlands; Carmo, VA. 1999. 'Problems in the management of international river basins – the case of the Incomati.' *International Workshop on River Basin Management,* UNESCO IHP-V Technical Documents in Hydrology, no.13. (Ed E Mostert) The Hague Oct 1999, and the references therein.

Mohamoda.[154] Although Mohamoda's work is limited in geographical focus, it shows important texts in the area of transboundary water law in the African context. As one reviewer commented:

> Mohamoda's paper is, as its title states, a brief review of the literature on issues concerning control of the Nile River's water. Mohamoda provides a theoretical and comparative introduction into issues concerning potential conflict over water and then reviews both cooperative activities among the states along the Nile and its tributaries and the literature about them. He sets these activities within the context of international agreements over both the Nile specifically and the United Nations 1997 Watercourse Convention. This pamphlet provides a quick guide to the sources on the recent debates over the use of the Nile that researchers could find handy.[155]

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[154] Mohamoda, DY. 2003. *Nile Basin Cooperation A Review of the Literature*. Uppsala: Nordiska Afrikainstitutet.

[155] Maddox, GH. 2004. 'Review of Mohamoda, Dahilon Yassin, Nile Basin Cooperation: A Review of the Literature', H-Africa, H-Net Reviews. January, 2004. Available at: http://www.h-net.org/reviews/showrev.php?id=8749: Last accessed 12 February 2011.

Turton and Henwood[156] also produced a useful text on world hydro politics from a southern African perspective. This volume of articles by various authors endeavours to dispel the general feeling among some sceptics that the world will have a water crisis. The truth according to the general reading of the book is that water is often mismanaged but if correct action is taken no conflict will arise.

Terje[157] has published two major useful bibliographies on the Nile River.[158] The first Bibliography in 2004 listed books and reports published before the year 2000 and had almost 4000 entries. In 2007, a second volume was published which registers literature on the River Nile published between 2000 and 2006. This volume, however, does not include books discussing different aspects of the global water issues, although they may briefly deal with the Nile issues. The reason is that these books very seldom bring forth new empirical knowledge.[159] The material in the second volume is sorted according to the categories used in first volume being Fisheries, Flora and Fauna, Political and Cultural

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[156] Turton, A. and Henwood, R. eds. 2002. *Hydropolitics in the Developing World: A Southern African Perspective*. Pretoria. University of Pretoria.

[157] Tvedt, T. 2004. *The Nile: An Annotated Bibliography*. (2nd Ed). London: I. B. Tauris.

[158] Tvedt, T. 2000. *The River Nile and its Economic, Political, Social and Cultural Role. An Annotated Bibliography*. Bergen: University of Bergen.

[159] Tvedt, T. and Hovden, E. 2008. *A Bibliography on the River Nile, Volume II.* Bergen: BRIC Press, p.3.

History, Physical Characteristics, Health, Projects and Reports, Travel and Exploration, Water use and water management. The last topic is the most useful for this study. Each category is then sorted alphabetically according to author and year of publication making it user friendly.

Tveldt also compiled other useful volumes of bibliographies.[160] The three volumes cover the history of water; water control and river and the political economy of water in the world. Among the varied themes, the contributors examine the changing histories of water as a private or common good, the politics of water at local, urban, national and international level, water in cities, great river plains, dams, river biographies, and cultural constructions of water-images of water in religion, myth, literature and art. With empirical and ethnographic case studies from around the world the three volumes together represent one of the most complete and up to date accounts of the central role of water in the history and development of humanity.

They thus are useful in so far as they present an overall picture about water at basin and international levels. Further, they remain useful particularly in areas where they provide

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[160] Tvedt, Terje et al. eds. 2005. *A History of Water. Vol. 1: Water Control and River Biographies. Vol. 2: The Political Economy of Water. Vol. 3: The World of Water.* London; New York: I.B. Tauris.

literature on internationally shared watercourses especially literature on African basins including the Okavango river basin.

Craig[161] and Zeitoum[162] have concluded that cooperation and conflict co-exist. According to these authors, the existence of cooperation does not mean that there is no conflict. In this light it is misleading to separate the two because there are complex interactions in transboundary water management. As Craig[163] explained,

> [c]onflict is a concept that is independent of co-operation; not always opposite to it. In certain circumstances, conflict may be an integral part of inducing and sustaining co-operative behaviour, and the two may coexist in various social settings.

Craig's conceptualization indicates that conflict and cooperation are not just on a continuum progressing from irrational individualistic conflict to rational collective

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[161] Craig, JG. 1993, *The Nature of Co-operation*. Black Rose Books: Montréal; New York.

[162] Zeitoun, M. 2007. 'The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater?' *Water International*. 2007 32 (1): 105 – 120

[163] Craig, JG. 1993, *The Nature of Co-operation*. Black Rose Books: Montréal; New York.

cooperation. This means that the existence of a transboundary water agreement does not mean that there is conflict. Although an agreement can be regarded as a benchmark for cooperation, the process of implementing or enforcing it can induce conflictive interactions. This connects us to specific literature on conflict.

One useful piece on cooperation and conflict in transboundary water relations is an article by Zeitoun. Although the article looks mainly at the conflict or cooperation in the Jordan River Basin whose politics is clearly different from that of the Okavango River Basin, it provides a good cooperative basis in the analysis which can be done on the dynamics of water equity in the latter. The article states that while there has been practically no evidence offered of a causal link between water and armed conflict, the real benefits of inter-state cooperation over water issues tend to be over-emphasised.

Along the west bank of the Jordan River there is ample evidence of both cooperation and conflict occurring simultaneously—an apparent contradiction referred to as the conflict versus cooperation paradox.[164] The article attempts to explain the paradox by examination of two features not commonly considered by water conflict analysts:

- an under-consideration of the dynamics and levels of conflict, and,

[164] Zeitoun, M. 2007. 'The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater?' *Water International,* 2007 32 (1): 105 – 120.

- a narrow focus on the very broad, complex and nuanced political context within which the competition for water exists.

In his article, through examination of the different levels of conflict, Zeitoun shows that the absence of war does not mean the absence of conflict, nor does it mean that competing riparians are cooperating. The author explores the political context through two theories from international relations. He examines the regime theory to show that far from one of its intended goals of allowing for proper water resources management, the structure of the Israeli-Palestinian Joint Water Committee allows Israel to maintain an 'Imposed-Order regime' while maintaining a veil over the conflict. The author applies the Security Theory to show how water issues are readily 'securitized' and how the asymmetric power relations between the two sides results in the conflict being contained, and lingering unresolved. By adding insight and clarity into the Palestinian-Israeli water conflict, this Article is a useful tool in adding nuanced the understanding of transboundary water conflicts in general and may guide good reasoning in regard to what is transpiring in the Okavango River Basin.

3.5.2 Conflict in Internationally-shared Watercourses

3.5.2.1 Will thirsty countries fight over water?

Research on water across different disciplines has shown that the world is running short of water hence there is a looming water crisis which may lead to water wars. Researchers

across the globe have voiced concern about the future of water reserves in various parts of the world. A recent report by the Integrated Regional Information Networks (IRIN) epitomises a growing consensus that exists about water.[165] Fontein however asserts that there is, we are often told, a global water crisis, of an unprecedented scale, unfolding.[166] The report quotes a pithy statement by Fred Pearce, to make the point about where responsibility for the crisis lies, and what the humanitarian stakes are likely to be:

> Our demand for water has turned us into vampires, draining the world of its lifeblood. What can we do to prevent mass global drought and starvation?[167]

The IRIN in-depth report refers to a respectable list of other reports, authors and institutions to build its case for an escalating water crisis. According to the International

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[165] IRIN/ Integrated Regional Information Networks. 2006. 'Running Dry: The Humanitarian Impact of the Global Water Crisis, In-Depth Report (October 2006)', available at http://www.irinnews.org/in-depth.aspx. Last accessed 26 June 2009.

[166] Fontein, J. 2008. 'The Power of Water: Landscape, Water and the State in Southern and Eastern Africa: An Introduction', *Journal of Southern African Studies*. 2004 34 (4): 738-756.

[167] IRIN, Running Dry, 2006, *supra*, note 165. See also Pearce, F. 2006. *When Rivers Run Dry: Water – The Defining Crisis of the Twenty-First Century*. Boston. Beacon Press.

Association of Hydrologists, with 'a global withdrawal of 600–700 km3/a [cubic kilometres per year]' groundwater is 'the world's most extracted raw material'.[168] Some experts warn that 'the amount of water being used globally is more than twice the quantity being recharged by rainfall every year',[169] and terse statements about pending threats to international security – that in the 21st Century armed conflicts, both international and civil wars, 'will be fought over water not oil'[170] – have become common place.

Literature also shows that in addressing water scarcity and increased population pressures many countries are adopting water management models, allocation strategies and water-pricing mechanisms as their primary means to regulate water consumption. A number of

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[168] IRIN, *Running Dry*, 2006 *supra,* note 165, p. 4.

[169] Fontein, J. 2008. Citing IRIN, *supra,* note 165, p.5

[170] Fontein, J. 2008. Citing de Villiers, M. 1999. *Water Wars: Is the World's Water Running Out?* London, Weidenfeld & Nicolson. See also Gleick, PH. 1993b. Water and Conflict: Fresh Water Resources and International Security. *International Security* 1993 18 (1): 99-104; Solomon, H. and Turton, AR. (eds), 2000. *Water Wars: Enduring Myth or Impending Reality? African Dialogue Series 2 (Durban/Pretoria, ACCORD*. Green Cross International and the African Water Issues Research Unit (AWIRU); Starr, J.R. and Stoll, DC. (Eds), 1998. T*he Politics of Scarcity: Water in the Middle East*. Boulder, CO: Westview; Turton, A.R. 1999. 'Water and Conflict in an African Context', *Conflict Trends,* 1999 5 (1): 24-27.

issues befuddle these processes across the globe including ownership regimes, management models and the relationship between water pricing and allocation on one side and the right to water on the other. Adding the prevalence of deteriorating water quality and the increased awareness for water-related environmental and social problems explains why water resource management has become a critical policy issue in many parts of the world. Wolf[171] says:

> Put all of these characteristics together -- international water as a critical, non-substitutable resource, which flows and fluctuates across time and space, for which legal principles are vague and contradictory, and which is becoming relatively more scarce with every quantum of growth in population or standard of living -- and one finds a compelling argument that, in the words of World Bank Vice-President Ismail Serageldin, "the wars of the next century will be about water."[172]

Governance has become a key consideration in the international literature on water governance and development. For example, The United Nations' 2003 World Water Development Report states that the water crisis is mainly a crisis of governance. The 1992 Dublin-Rio Statement acknowledges that water is massive in volume but 'finite' in

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[171] Wolf, AT. 1998. Conflict and Cooperation along International Waterways. *Water Policy*. 1998 (1)2: 251-265, p4.

[172] *New York Times*, 10 August 1995, p.19.

nature. Attached to governance issues is the concept of ownership of common pool resources and rights allocation for same.

Some authors have linked environment conflicts to armed conflict. Gleditsch[173] argues that conflict over scarce resources, such as minerals, fish, water, and particularly territory, is a traditional source of armed struggle. The author considers previous literature which made claims to the effect that environmental degradation will increase resource scarcity and therefore contribute to an increase in armed conflict and notes that so far, there has been much controversy and little relevant systematic study of this phenomenon. In his further critique of literature, he argues that most scholarship on the relationship between resources, the environment, and armed conflict suffers from one or more of the following:

a) there is a lack of clarity over what is meant by `environmental conflict';
b) researchers engage in definitional and polemical exercises rather than analysis;
c) important variables are neglected, notably political and economic factors which have a strong influence on conflict and mediate the influence of resource and environmental factors;
d) some models become so large and complex that they are virtually untestable;
e) cases are selected on values of the dependent variable;

[173] Gleditsch, N P. 1998. 'Armed Conflict and the Environment: A Critique of Literature.' *Journal of Peace Research.* 1998 35(3): 381–400.

f) the causality of the relationship is reversed;

g) postulated events in the future are cited as empirical evidence;

h) studies fail to distinguish between foreign and domestic conflict; and

i) confusion reigns about the appropriate level of analysis.

Gledtsch then notes that while no publications are characterized by all of these problems, many have several of them. On this note his article generally identifies a few problems which have not been identified clearly in previous literature and briefly outlines a program of research in transboundary water law in the context of conflict. In his informative paper, Ross[174] examines the area further and provides an outline with representation of available more recent literature concentrating more on the existing links between natural resources and civil war. This article however suffers from the fact that it does not touch on water specifically. Instead, it concentrates more on other natural resources such as oil and mineral resources. There are more reviews of literature concentrating more on the abovementioned points.[175]

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[174] Ross, M L. 2004. 'What Do We Know About Natural Resources and Civil War?', *Journal of Peace Research.* 2004 41(3): 337–356.

[175] Homer-Dixon, TF. 1995. 'The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity', *Population and Development Review.* 1995 (21) 3:587-612. Tamas, P. 2003. 'Water Resource Scarcity and Conflict: Review of Applicable Indicators and Systems of Reference', UNESCO, PC-CP Project. Available at:

3.5.2.2 Management of Transboundary Water Conflicts

A survey of existing literature shows that, there are few comprehensive analyses of international surface water conflict management but out of those few there are some useful texts for this specific study. Heather *et al*[176] provide a comprehensive review of the relevant literature on managing conflicts stemming from the quantity and quality problems of water around the world. The first part deals with theoretical works, which are divided into organizational theory (institutional and negotiation) and economic theory (optimization models and game theory). The second part makes an overview of literature on practical problems, comparing water disputes with other environmental disputes (with a particular angle on the concept of environmental security). Appendixes present short portraits of 13 major international river basins, extensive summaries of water treaties, annotated literature and bibliography.

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http://unesdoc.unesco.org/images/0013/001333/133307e.pdf. Last accessed, 8 December 2010.

[176] Beach, H., Hammer, J., Hewitt, J., Kaufman, E., Kurk, A., Oppenheimer, JA and Wolf, AT. 2000. *Transboundary Freshwater Dispute Resolution: Theory, Practice, and Annotated References*. Water Resources Management and Policy Series. New York: United Nations University Press.

A general reading of the book shows that while in many areas there has been extensive research and analysis, there continues to be a need for more studies on the specific situations that lead to conflicts over water and other environmental resources. In a paragraph on literature review regarding water disputes world-wide, the authors say:

> Treaty studies occupy only a small fraction of the dispute resolution literature. Most recently, Wescoat (1996)[177] has produced "Main Currents in Early Multilateral Water Treaties: A Historical Perspective." Legal Scholarts have discussed international law and treaty making, notably Teclaff (1991)[178] and McCafrey (1993).[179] McCafrey also Offers theories about trends in treaty making, specifically the move towards integrated management from cut-and-paste approaches, the move away from navigation as the primary use and the trend towards "equitable

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[177] Wescoat, JL. Jr. 1996. 'Main Currents in Early Multilateral Water Treaties: A Historical-Geographic Perspective, 1648-1948', *Colorado Journal of International Environmental Law and Policy*, 7 (1):39-74, p36.

[178] Teclaff, LA. 1991. 'Fiat or Custom: The Checkered Development of International Water Law. *Natural Resources Journal.'* 1991(31):45-73.

[179] McCaffrey, SC. 1993. 'Water, Politics and International Law,' in P. H. Gleick (Ed.), *Water in Crisis; Guide to the World's Water Resources*. Oxford: Oxford University Press.

utilisation". Hayton (1988, 1991)[180] has argued that international law should include hydronic processes in its theory. Dellapenna (1995)[181] describes the evolution of treaty practice dating back to the mid – 1800s and Westcoat assesses historic trends of water treaties dating from 1648 – 1948 in a global perspective. Gulhathi (1973)[182] and Michell (1967)[183] provide the most comprehensive analysis of a single treaty and the events and people leading up to its approval. The two authors discuss the 1960s Indus Treaty. Deeper analysis of major treaties like Gulhathi and Michel's work is necessary for better interpretation of any statistical data the database may produce.

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[180] McCaffrey, SC. The Evolution of the Law of International Watercourses, *Australian Journal of Public International Law*. 1993 45(87): 361-375.

[181] Dellappenna, J. 1995. "Building International Water Management Institutions: The Role of Treaties and Other Legal Arrangements", in Allan, JA. Mallat, C.1995. *Water in the Middle East: Legal and Political and Commercial Implications.* London and New YorkTauris Academic Studies.

[182] Gulhati, ND. 1973. *Indus Water Treaty: An Exercise in International Mediation*. Bombay, Allied Publishers, pp.18,24

[183] Mitchell, JE. 1967. 'Planning of Water Development in Hashemite Kingdom of Jordan.' Unpublished paper presented at International Conference on Water for Peace, Washington D.C., 23-31 May 1967.

Wallensteen and Swain[184] provide a comprehensive assessment of the freshwater resources of the world, in collaboration with the UN Commission for Sustainable Development. The book first examines the general parameters of the problem, including growing scarcity and falling water quality. It then looks specifically into the link with international water conflicts, focussing on five cases: the Colorado River, the Rhine River, the Paraná River, the Nile River, and the Ganges River. The conclusions combine the warnings about growing conflict potential with specific recommendations on ways of resolving these conflicts.

Assessing how to better manage conflicts in transboundary water regimes Zaag, *et al*, consider the principle of equitable distribution to be useful. [185] In order to have an effective equitable distribution of water, the demands of each nation sharing the river should be assessed and weighed against other nations demands and interests. Therefore,

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[184] Wallensteen, P. and Ashok, S. 1997. *International Fresh Water Resources: Conflict or Cooperation?* Stockholm: Stockholm Environment Institute.

[185] Van der Zaag, P., Hubert, SIM and Savenije, HG. 2002. 'Towards Measurable Criteria for the Equitable Sharing of International Water Resources.' *Water Policy* 2002 (4): 19–32. This informative paper consists of three parts. The first part defines six possible criteria and algorithms for the equitable allocation of water resources, using the Orange River (known as Senqu River in Lesotho) as an example.

there should be a balanced assessment of the demand and supply side. The criteria taken into account, on the demand side, the number of countries sharing the water, the basin areas of each riparian country, and the riparian population. On the supply side, the criteria consider 'blue' water and 'green' water.[186] Green water is a very important resource for agricultural production, which is generally overlooked in water resources assessment. According to Falkenmark, the criterion that considers blue and green water resources and that uses the basin population as the main allocation variable yields the most equitable water allocation. [187] Two important variables are identified over which the riparian countries should reach consensus:

(a) The value of green water relative to blue water.

(b) The fraction of reserved water, which is defined as the basic entitlement of each riparian country.[188]

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[186] Blue water is renewable water that occurs in rivers and aquifers. Green water is renewable water that occurs in the soil; it is the part of the rainfall that infiltrates into the root zone and is directly used by plants for biomass production through transpiration. See generally, Falkenmark, M. 1995. 'Coping with water scarcity under rapid population growth', unpublished Paper presented at Conference of SADC Ministers, Pretoria, South Africa, 23–24 November 1995.

[187] *Ibid*, p.5.

[188] *Ibid*, p.6-7.

It noteworthy that the findings by van der Zaag, *et al* are based on approximate data and have, therefore, a limited validity. To this end the article can be useful in so far as it can be regarded as a tool to de-politicise negotiations between states sharing transboundary waters thus, it is a tool for reducing stalemates in transboundary water negotiations.

One other way of managing transboundary water conflicts is through conclusion of agreements. In these agreements principles of equitable utilization may be included and can help minimize potential for conflict and increase conflict potential. Wolf[189] explores the question of equity measures for water-sharing agreements in the context of global hydro politics and provides a brief summary of the general principles of equitable allocations, including the general 'rights-based' criteria and the 'efficiency-based' criteria of economics. The author argues that the question of 'equitable' allocations forms the core of the most international water conflicts.

Further, according to Wolf, application of an equitable water-sharing agreement is a prerequisite to hydro political stability. Generally, this paper offers a general but useful description of the practice of water resources allocations as exemplified in the Transboundary Freshwater Dispute Database - a computerized database of 145 treaties relating to international water resources compiled at Oregon State University. This paper

[189] Wolf, AT., 1999. 'Criteria for Equitable Allocations: The Heart of International Water Conflict', *Natural Resources Forum* 1999 23(1): 3–30.

can be useful in drawing comparative views and clues to the answers to the research question in this specific study.

In the management of transboundary water conflicts, Beach, *et al*[190] are of the general opinion that there is need to understand the general similarities over water needs in each reparian country is essential so that a balance will be easier to strike in meeting these needs. Further, according to these authors, an attempt to understand the similarities between all conflicts over natural resources, will lend itself to future applications in predicting and preventing these conflicts. This conclusion comes after a provision of some bibliographical and general data collected from over 200 transboundary watersheds. A subset of case studies of the exhaustive list of international watersheds is examined in greater detail.

A related effort is a compilation and analysis of relevant water treaties, and the rationale for their partial implementation. This study is useful in that it will guide the researcher hereof in assessing the needs of Namibia, Angola and Botswana and such an assessment can be used in drawing the potential conflicts between the three countries in the management or utilisation of the Okavango River Basin water resources.

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[190] Beach, H. 2000, et al *supra*, note 143.

If a conflict arises between or among riparian States, it is important that such conflict be resolved expeditiously through an amicable method. Rowland[191] describes a methodology for resolving transboundary water disputes that arise when people/states/ nations sharing a resource that crosses legal/political jurisdictions disagree about the use of the resource. The author says that there is the necessity for the adoption of a more effective institutional arrangement to address and resolve present and future problems.

A better alternative to management by private or state entities and the resolution of conflicts by the mere application of law is a cooperative approach.[192] The authors thus introduce a framework named after them called the Rowland-Ostrom Framework. This framework incorporates Ostrom's eight design principles for sustainable common pool resource management within the context of crisis that involves an urgent threat to the quantity or quality of a resource such as water. In this light the Rowland-Ostrom Framework can be taken as a model for the equitable use of shared water resources throughout the world and may be transplanted to the Kavango River Basin.

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[191] Rowland, M. 'A Framework for Resolving the Transboundary Water Allocation Conflict Conundrum', *Ground Water*, 2005 (43)5: 700–705.

[192] *Ibid*, p.700.

Stakeholder participation is an especially important factor in ensuring the equitable distribution of water resources. Zenani and Mistri[193] say that the complexity of present challenges in terms of water resource management especially in Southern African countries is such that neither the state nor the communities can succeed alone. They need to collaborate.[194]

> The management of water resources therefore should include various stakeholders according to their legislated responsibilities, interests and capacity. The above review of water related legislation shows this complexity and progression in the way people understand water resource management. It illustrates that there is an attempt to progressively integrate public participation and accountability in water management issues.[195]

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[193] Zenani, V and Mistri, A. 2005. *Desktop study on cultural and religious uses of water in South Africa; using Regional Case Studies.* Unpublished Report. Department of Water Affairs and Forestry: Unit Stakeholder Empowerment. p11.

[194] *Ibid.*

[195] *Ibid.*

Participatory democracy involves "high levels of participation without systematic differences across social categories."[196] Fiorino discusses the role of public hearings, public surveys, citizen review panels, ballot initiatives, and negotiated rulemaking as a mechanisms for community involvement and public participation in environmental issues.[197]

The importance of public participation was also recognised in Principle 2 of the Dublin Statement on Water and Sustainable Development, 1992, (the Dublin Statement) which states that water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels. It further notes that the participatory approach involves raising awareness of the importance of water among policy-makers and the general public. This implies the inclusions of the lowest strata of the society in decision-making processes up the top and a bottom up approach is encouraged.

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[196] Huber, E., Rueschemeyer, D. and Stephens, JD. 1992. 'The Paradoxes of Contemporary Democracy: Formal, Participatory, and Social Dimensions', *Comparative Politics*, 1997 29 (3):323-342, p.324.

[197] Daniel JF, 1990. 'Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms', *Science, Technology & Human Values*, 1990 15(2): 226-243, p.234.

From a gender perspective Principle 3 of the Dublin Statement also recognised the need to equip and empower women to participate at all levels in water resource programmes, including decision-making and implementation. This was put in because of the general importance of women's reproductive roles and their central role in water management especially at community level. In similar wording, paragraph 18.9(c) of Agenda 21 provides that the design, implementation and evaluation of integrated water resources management plans should be based on an approach of full public participation, including that of women, youth, indigenous people and local communities in water management policy-making and decision-making.

According to Zimmerman, inter-state institutions in the United States are commonly criticized as "responsible to no one, and the legislatures of the party states exercise little control over the activities of the authorities."[198] This accountability gap is further complicated in situations of inter-state water governance, as watershed boundaries and political boundaries often do not overlap. Lack of stakeholder involvement and public accountability can lead to an inequitable distribution of transboundary water resources.[199] As the author puts it:

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[198] Zimmerman, J. *Interstate Relations – The Neglected Dimension of Federalism*.' Westport, CT: Praeger Publishers, p.33.

[199] Schlager, E. and Blomquist, E. 2008. Embracing Watershed Politics. Boulder: University Press of Colorado, p.60-61.

> There are clear shortcomings in equity with respect to freshwater, as at least 1.1 billion people in the world lack access to clean drinking water. The UN International Covenant on Economic, Social and Cultural Rights explains that access to safe water is a central factor in maintaining human health. States are instructed to safeguard their citizens' health by implementing policies to combat pollution of environmental resources, including water.[200]

It is trite that recognition of this human right ensures that drinking water is considered a legal entitlement, rather than a commodity or service.[201] The UN formally adopted water as a human right in 2002, emphasizing water availability, accessibility, and quality as the

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[200] Piper-Goldberg, L. 2009. *Transboundary Water Governance in New England: A Case Study of the New England Interstate Water Compact Commission.* Thesis submitted in Partial Fulfilment of the Requirements for the Degree in Bachelor of Arts Center for Environmental Studies Brown University. Available at http://envstudies.brown.edu/theses/lizpipergoldbergthesis.pdf. Last accessed 12 October 2010.

[201] See generally, World Health Organization. 2003. The Right to Water. http://www.who.int/docstore/water_sanitation_health/Documents/righttowater/righttowater.pdf. Last Accessed 7 October 2010.

key factors that determine how adequately this need is being met.[202] The UN Convention on the Law of Non-Navigational Uses of International Watercourses of 1997 codifies the relevant principle of equitable and reasonable use. Without the requisite 35 state ratifications, this Convention has not come into force.[203] However, this principle has entered into international customary law and has influenced the development of many place-specific treaties worldwide.[204]

Regarding conflict and its degrees and dynamics, the paper by Zeitoun, et al,[205] examines the role and effects of 'soft' or covert forms of power in non-violent water conflicts in hegemonic settings. It counters much of the work reflecting a growing interest in inter-state transboundary environmental analysis focused on links between natural resources

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[202] UN Economic and Social Council, "Substantive Issues Arising In the Implementation of the International Covenant of Economic, Social and Cultural Rights," 11/26/2002, Accessed 4/23/09, http://www.citizen.org/documents/ACF2B4B.pdf>.

[203] Wouters, P. 2000. 'National and International Law: Achieving Equitable and Sustainable Use of Water Resources.' *Water International*. 2000 25(4). 499-512.

[204] UN Water, 1998. *Transboundary Waters: Sharing Benefits, Sharing Responsibilities.* UN Water.

[205] Zeitoun, M., Mirumachi, N. and Warner, J. 2009. 'Transboundary Water Interaction II: Soft Power Underlying Conflict and Cooperation. ' Unpublished Working Paper. June 2009, p.2.

and violent conflict. The paper examines how the less observable forms of power, and power asymmetry, serve to perpetuate inequitable and ultimately unsustainable arrangements.[206] The authors observe that in hegemonic situations where the 'first amongst equals' has a greater ability to define and shape the interaction, states with less capacity of covert power may find compliance the only pragmatic alternative. The paper also discusses how 'soft' power can be used to frame inequitable forms of cooperation in a positive light. [207]

The findings documented in this paper stress the importance of analysts questioning first or claimed appearances of 'positive' cooperation, and of examining the soft power underlying transboundary arrangements. [208] An implication for policy is that power asymmetry be acknowledged and confronted, through attempts to level the playing field, or through the facilitation of steps for basin hegemons to take on leadership positions. Exemplification is given through consideration of transboundary water resources around the globe, primarily in the Middle East, North Africa and Asia and it offers a good basis for comparison and analysis of the Okavango River Basin.

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[206] *Ibid*, p.2.

[207] *Ibid*.

[208] *Ibid*.

3.5.3 Cooperation in Internationally-shared Watercourses

3.5.3.1 General literature

Significant literature has developed over the years regarding transboundary water cooperation and several theories have been propounded to explain how states come to the point of cooperating as opposed to conflicting over transboundary water resources. This literature originates from different disciplines including politicians, legal experts, economists, anthropologists and historians. This literature approaches the subject from different angles and argues from different basin backgrounds. The general reading thereof still leaves one wondering whether the general global trend is cooperation or conflict.

As can be seen from the debates on conflict above, there has been significant literature which has pushed the 'water war' argument to the agenda all the time. This literature however has been countered by those who cannot find evidence of conflict in international water law. The 'water war' debate has been advanced by those who treat water as a security issue and has been written upon especially by lawyers and politicians. As has been highlighted above, the main argument of these authors has been that a few water wars have been fought before and now with the geometric increase in global population against dwindling water resources there is going to be wars over water.[209] On

[209] Cooley, J. 1984. 'The War over Water.' *Foreign Policy* 1984 (54): 3–26.; Starr, J. 1991. 'Water Wars.' *Foreign Policy,* 1991 (82):17-36; Bulloch, J. and A. Darwish,

the other hand however there is a growing body of scholars who say that instead of having wars over water the fact that water is proving to be scarce will cause States to cooperate as opposed to fighting against each other. Therefore, according to these scholars water is

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1993. *Water Wars, Coming Conflicts in the Middle East*. London: Victor Gollancz.; Soffer, A. 1999. *Rivers of Fire: The Conflict over Water in the Middle East*. Rowman & Littlefield Publishers.; Myers, N. 1993. *Ultimate Security: The Environmental Basis of Political Stability*. New York and London; W.W. Norton & Company. Gleick, P. 1993. 'Water and Conflict: Fresh Water Resources and International Security.' *International Security 1993.* (18): 79-112; Homer-Dixon, T. 1994. 'Environmental Scarcities and Violent Conflict: Evidence from Cases.' *International Security 1994 (*19):5-40; Lowi, M. 2000. 'Water and Conflict in the Middle East and South Asia', in Lowi, M. and B. Shaw (Eds.), 2000. *Environment and Security: Discourses and Practices*. New York: St. Martin's Press; Matthew, R. 1999. 'Scarcity and security: A common-pool resource perspective', in Barkin, J.S. and G.E. Shambaugh (Eds.), *Anarchy and the Environment: The International Relations of Common Pool Resources*. Albany: State University of New York Press; McCaffrey, S. 1993. "Water, politics and international law", in Gleick, P. (ed.), *Water in Crisis*. Oxford. Oxford University Press; Wolf, AT. 1999. 'Water Wars' and water reality: Conflict and cooperation along international waterways', in Lonergan, S. (Ed.), *Environmental Change, Adaptation, and Security*. Dordtecht, Boston and London: Kluwer Academic Publishers.

actually an instrument for cooperation not a cause of conflict even in the future. These scholars now take different angles to support their points and various theories have been propounded based on different case studies to support such theories.[210]

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[210] Allan, AJ. 1996. "The Political Economy of Water: Reasons for Optimism but Long Term Caution," in Allan, JA. and Court, JH. (Eds.), *Water, Peace and the Middle East: Negotiating Resources in the Jordan Basin*. London and New York. I.B. Tauris Publishers; Ohlsson, L. 1999. *Environment, Scarcity and Conflict: A Study of Malthusian Concerns*', Unpublished PhD Dissertation, Department of Peace and Development Research, University of Goteborg; Wolf, AT. 1999. 'Criteria for Equitable Allocations: The Heart of International Water Conflict', *Natural Resources Forum.* 1999 23(1): 3–30. Dolatyar, M. and G. Timothy 2000. *Water Politics in the Middle East: A Context for Conflict or Co-operation*? New York: St. Martin's Press; Wolf, A.T. and J. Hamner, 2000. "Trends in Transboundary Water Disputes and Dispute Resolution,' in Green Cross International*: Water for Peace in the Middle East and Southern Africa*. Green Cross International, Wolf, A.T. 2000. "Hydrostrategic territory in the Jordan Basin: Water, War, and Arab-Israeli Peace Negotiations," in Amery, H. and Wolf, A. (Eds.), *Water in the Middle East: A Geography of Peace*. Austin: The University of Texas Press. Turton, A. 2000. "Water wars in Southern Africa: Challenging Conventional Wisdom", in Solomon, H. and Turton, A. (Eds.), *Water Wars: Enduring Myth or Impending Reality*. Africa Dialogue: Monograph Series 2. African Center for the Constructive Resolution of

As shall be shown in more detail below, older literature on international water cooperation studies concentrated on negotiation. These authors looked mainly at the actors involved in an international water basin, their interests and the resources that are available. The degree of consensus over resource utilisation and the formation of coalitions in management of resources was taken as a major indicator of the success of the negotiation process hence cooperation.[211] Modern literature has come up with multiple theories to explain cooperation. This literature has given rise to a multiplicity of economic theories, regime theory and security theory, and institutional theory just to mention a few of them.

Disputes, South Africa.; Lowi, 2000, *supra*; Allan, 2001. *supra*; Lonergan, SC. 2001. "Water and Conflict: Rhetoric and Reality," in Diehl, P. and Gleditsch, NP. (Eds.), *Environmental Conflict*. Boulder and Oxford: Westview Press; Uitto, J. and Wolf, AT. 2002. 'Water Wars? Geographical Perspectives: Introduction', *The Geographical Journal*. 2002 168(4): 289–292.

[211] Fox, IK. and Le Marquand, DG. 1978. 'International River Basin Cooperation.' *Water Development and Management: Proceedings of the United Nations Water Conference.* Mar del Plata, Oxford. Pergamon Press; LeMarquand, DG. 1977. *International Rivers: The Politics of Cooperation*. Vancouver: Westwater Research Centre, University of British Columbia.

There are some significant pieces of literature which provide useful comparative analysis of cooperative interactions in various international river basins. Among the very few larger studies on international rivers are articles by Mandel[212] and Haftendorn.[213] Mandel studies river basin conflicts, concluding that conflicts are most intense in cases where border and water disputes coincide (Shatt-al-Arab, Rio Grande) than in water quality cases (Colorado, Danube, La Plata), and when conflicts are triggered by man-made technological disruptions (Euphrates, Ganges, Indus, Nile) rather than by natural events (e.g. flooding, Columbia, Senegal rivers).

Haftendorn concentrates on the origins of water conflicts and attempts at solving them. Her comparison suggests that co-operation is facilitated by improvements in information exchange and promotion of confidence, embedding the conflict in a positive interactive complex, creation of package solutions through linkage strategies, use of arbitration, mediation, and intervention. It was unclear whether this conclusion was applicable in the context of transboundary water equity principles applicable to the Okavango River Basin.

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[212] Mandel, R. 1992. 'Sources of International River Basin Disputes', *Conflict Quarterly.* 1992 X11(4). 25-56.

[213] Haftendorn, Helga, 2000. 'Water and International Conflict', *Third World Quarterly. 2000* 21(1): 51-68.

There are also more recent comparative texts on transboundary river basins.[214] While these studies also compare several cases of international river management, they are less systematic than Le Marquand's book in terms of using a coherent analytical framework. Elhance,[215] and Shmueli's[216] works, which are edited volumes, illustrate this drawback rather well. Both of them contain some theoretical chapters and some chapters with empirical case descriptions. But no attempt is made to connect theoretical arguments and empirical analysis in a coherent manner.

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[214] Chapman, 1963, *supra*, note 87. Fox, IK. and DG. Le Marquand, 1978, *supra*, note 87. Vlachos et al., 1986, *supra*, note 87; Frey, 1993, *supra*, note 87; World Bank, 1993, *supra*, note 87; Rangeley, R. 1994. *International River Basin Organizations in Sub-Saharan Africa*. World Bank, Washington D.C., Barrett, 1994, *supra*, note 87; Ganoulis, J., Duckstein, L., Literathy, P. & Bogardi, I. (Eds.). 1996. *Transboundary Water Resources Management*. Springer, Berlin.; Nakayama, M. 1997. 'Successes and Failures of International Organizations in Dealing with International Waters.' *Water Resources Development* 1997 (13): 367–382. Elhance, 1999, *supra*, note 87 and Shmueli, 1999, *supra*, note 87.

[215] Elhance, 1999, *supra*, note 87.

[216] Shmueli, 1999, *supra*, note 87.

3.5.3.2 Perspectives: Water as a promoter of inter-state cooperation

As highlighted above, there are scholars who have based their assertions on that there is likely to be cooperation rather than conflict on the negotiation approach. Le Marquand is generally considered to be the first to systematically address the topic of cooperation in international rivers in the context of negotiation. According to him:

> '[t]ogether the hydrological sequence of the countries within a basin and the present or potential social-economic demands on the river by the basin countries create different patterns of incentives for cooperation. These patterns of riparian relationships can be usefully discussed in terms of common property of resources. The river is the medium by which effects of actions taken in one country […] are transported to other basin countries'[217]

Le Marquand goes on to say that in order to establish cross-border co-operation 'for each party the net satisfaction desired from international agreement must be greater than that associated with the national option.'[218] In this context Lowi[219] presents a study of the hydro politics in the Middle East, particularly the dispute between the Palestinians and

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[217] LeMarquand, DG. 1977. *International Rivers: The Politics of Cooperation*. Vancouver: University of British Columbia, Westwater Research Centre, pp.7-8

[218] *Ibid*, p.19.

[219] Lowi, M. 1993. *Water and Power*. Cambridge. Cambridge University Press.

the Israelites and submits that it is only when the larger political issues such as identity, recognition, and security are discussed seriously that cooperation on water can advance in a more meaningful manner and at the same time help the negotiation on the larger issues gain more momentum.

Some authors have considered power and geography to be determinant factors in the success of the negotiation process. These authors have argued that if a country is economically and more militarily powerful it is more likely going to hold sway in the direction of the negotiations.[220] Zartman and Rubin,[221] however doubt that this is the case. They postulate that in the negotiation process, power is better understood as being issue-specific rather than static and aggregate. This line of reasoning seems to be supported by recent studies which are documented especially in literature produced after the Cold War when general perspectives were inclined to follow the view of water as an economic good yet at the same time emphasis being had on the human need for this basic good.

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[220] Lowi, M. and Rothman, J. 1993. "Arabs and Israelis: The Jordan River", in Faure, GO and Rubin, JZ. (eds). 1993. *Culture and Negotiation.* Sage Publications. London, pp. 156-175.

[221] Zartman, W.I. and J. Rubin 2000. 'Symmetry and Asymmetry in Negotiation.' In Zartman, WI. and J. Rubin (Eds.), 2000. *Power and Negotiation*. Ann Arbor, MI: The University of Michigan Press.

Kremenyuk and Winfried[222] consider geography to be a more powerful factor in the negotiation processes. They submit that upstream riparian states know that their actions can harm downstream States so they are more likely going to ask for relaxed rules on pollution for example whereas downstream states will most likely ask for strict rules on pollution so as to curb the actions of upstream states. Similarly, Mattthew[223] concludes that downstream riparians are more likely going to cooperate in negotiations because of their fear of harm from the actions of the upstream riparians whereas upstream riparians are less likely to care much about equity and issues such as pollution of the water.

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[222] Kremenyuk, V and. Winfried, LW. 1995. 'The political, diplomatic and legal background', in Sjostedt, G. (ed.), 1995. *International Environmental Negotiation.* Newbury Park, London, New Delhi. Sage Publications, pp.8–9.

[223] Matthew, R. 1999. "Scarcity and Security: A Common-Pool Resource Perspective," in Barkin, JS. and GE. Shambaugh (eds.), *Anarchy and the Environment: The International Relations of Common Pool Resources.* Albany: State University of New York Press. pp.171. See also Polachek, SW. 1997. 'Why Democracies Cooperate more and fight Less: The Relationship Between International Trade and Cooperation.' *Review of International Economics*. 1997 5(3), 295–309.

Regarding economic theories on water cooperation, perhaps the most comprehensive economic theories are found in Dinar's paper.[224] Borrowing from own prior works the author argues that economic concepts are applicable in the case of resource conflicts arising from market failure; they can be used to design institutions and organizational solutions in terms of rules and structures that are socially desirable; and they identify solutions that are associated with gains to all parties involved in the conflict.[225] The argument follows comprehensive literature review on economic analysis of transboundary water resource allocations across the Middle East, Africa and parts of Europe.

The literature analysed in this paper provides several methods that can be adapted to finding cooperative solutions. The paper also reviews several approaches and

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[224] Dinar, A. 2004. 'Cooperation in Managing Transboundary Water Resources: Evaluation Approaches and Experiences.' Unpublished Paper presented at the 4th Rosenberg International Forum on Water Policy, Ankara, Turkey, September 3-9, 2004. Available at www.rosenberg.ucanr.org/documents/TransboundaryWaterResources.doc. Last accessed 23 February 2010.

[225] Loehman, ET., and Dinar, A. 1995. 'Introduction', in Dinar, A., and Loehman, E. T., (eds.), 1995. *Water Quantity/Quality Management and Conflict Resolution: Institutions, Processes, and Economic Analyses.* Westport, CT. Praeger.

demonstrates how economic theories have been applied to water resource-related cooperative analyses. This paper is especially useful if viewed from an economic perspective hence it is limited when it comes to a predominantly legal approach as this study. However, the paper remains informative in so far as there are significant overlaps between law, politics and economics when it comes to cooperation and conflict in transboundary water equity.

Sadoff and Grey's paper on co-operation on international rivers summarises ongoing work on a framework for achieving co-operation on international rivers. The authors say that there is need for progressive movement from unilateral national agendas to national agendas that incorporate significant co-operation and increasingly converge upon a shared co-operative agenda. Further the extent to which this cooperation will occur will be determined by each party's perception of the benefits it can capture.

Progressive convergence towards a co-operative agenda will be facilitated by several important and practical steps. According to the authors:

> First, the range and extent of perceived benefits needs to be broadened to the extent possible, from the obvious to the less apparent. Second, alternative levels of co-operation need to be recognised and appropriate level of co-operation identified to capture the greatest net benefits. Third, the distribution of benefits, and benefit sharing opportunities to redistribute the costs and benefits of co-operation, must be explored to

> promote a co-operative agenda that will be perceived as fair by all parties.[226]

In addition, Dinar and Dinar,[227] are of the view that states will cooperate when circumstances make cooperation a necessity. This normally happens in cases of scarcity. Therefore, according to the authors, where scarcity is threatening the wellbeing of states, such states are more likely going to cooperate in order to preserve the scarce resource. However, there is need for coordinated and consistent action otherwise conflict will arise. On this note, the authors' assertion is dependent on one important variable being, consistence in acceptable action in the preservation of the scarce resource. The scarcity abundance dichotomy in water affairs explains why there are treaties negotiated between some countries and not others. Therefore, the treaty versus no treaty situation, scarcity is an important factor to consider.

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[226] *Ibid*.

[227] Dinar, S. and A. Dinar, 2004. 'Scarporation: The Role of Scarcity in Cooperation among Basin Riparians', Paper presented at the 2004 ISA Annual Convention, Montreal, Canada, 17-20 March, 2004.

Some authors argue from a cultural theory perspective. Kistin and Phillips[228] argue that the focus on cooperation and agreements as an embodiment of cooperation does not examine if and how problems of transboundary waters are solved. Similarly Zeitoun and Mirumachi[229] argue that the conflict and cooperation continuum is a result of a crude understanding of how transboundary water interactions occur between riparian states. The fact that it is transboundary water interactions that we must examine, not conflict and cooperation, highlight the fact that water is about politics. As Barnett aptly puts it:

> … if there is conflict over water, then that conflict is the result of a failure of politics to negotiate a settlement over the shared use of water [emphasis in original]. The idea that a war over water, or any other resource, is not a war about politics is dubious.[230]

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[228] Kistin, E. and Phillips, D. 2007. 'A Critique of Existing Agreements on Transboundary Waters, and Proposals for Creating Effective Cooperation between Co-riparians', Unpublished paper presented at the *Third International Workshop on Hydro-Hegemony*, London, May 12-13, 2007.

[229] Zeitoun, M. & Mirumachi, N. 2008. 'Transboundary Water Interaction I: Reconsidering conflict and cooperation.' *International Environmental Agreements,* 2008 (8): 297 - 316.

[230] Barnett, J. 2000, 'Destabilizing the Environment-Conflict Thesis', *Review of International Studies.* 2000 (26): 271-288, p.276.

In the light of the above point and the following literature, it is incontrovertible that transboundary water allocation involves collective action of a range of actors, not just basin states but also sub-national groups, international and transnational organizations. Each actor has its own view or "rationality" of how water should be managed and developed.[231] Cultural theory (or Grid-group analysis or Theory of Plural Rationality) is a useful tool in this regard to show that actors are not homogenous. As a result, water can be politicised by one group of actors playing up an image of threatened water resources or in other cases, another group of actors depoliticizing it to deflect attention on scarce water resources.

A paper by Lautze *et al*.[232] is useful to this study in so far it can provide clues to the question whether the signing of an international agreement leads to cooperation as opposed to conflict. It however does not consider equity principles which are a useful determination in so far as the queries on how states are interacting are concerned. In this

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[231] Verweij, M. 2000, *Transboundary Environmental Problems and Cultural Theory: The Protection of the Rhine and the Great Lakes*, Palgrave, Houndmills, Basingstoke. Hampshire; New York.

[232] Lautze, J., Giordano, M and M Borghes. 2005. "Driving forces behind African transboundary Water Law: Internal, and External Implications." *International Workshop on African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa*. Johannesburg, South Africa, 2005, p.1.

paper the authors, using both textual and contextual analysis, provide an initial assessment of the drivers of international water law in Africa's post-colonial period. The authors first develop a typology of major drivers and then use that typology to examine the development and implementation of transboundary water law in four African basins: the Nile, Senegal, Niger, and Volta.[233]

The analysis reveals that, while virtually all agreements are driven by a combination of internal and external factors, external drivers have played a major role in agreement orientation and realisation and in some cases are even responsible for treaty formation.[234] Importantly, these external drivers generally reflect global paradigms that have been imported to Africa regardless of whether conditions on the continent warrant their use.

Some literature looks at institutional arrangements as a yardstick for successful cooperative arrangements. The UN Thematic Paper on Transboundary Water establishes that:

> The right institutional structures at the national, transboundary and regional levels are a precondition for sustainable development and management of transboundary waters and for lasting cooperation among riparian States…and the formation of joint bodies with strong

[233] *Ibid*, p.1.

[234] *Ibid*, p.2.

> enforcement capacity, such as river, lake and aquifer commissions, is fundamental to ensuring cooperation between the various governmental entities.[235]

This position is supported by the provisions of the Convention. Article 8(2) of the Convention provides that:

> In determining the manner of such cooperation, watercourse states may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

The position of the United Nations is more holistic than some individual writers in that it considers institutions to be important but their success depend on other factors as well. Such factors include treaties which have enforcement mechanisms which translate into institutional structures for the implementation of the Treaty. The above statement also

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[235] United Nations. /UN. 2008. UN Water, *'Transboundary Waters: Sharing Benefits, Sharing Responsibilities,*' Available at http://www.unwater.org/downloads/UNW_TRANSBOUNDARY.pdf>. Last Accessed 23 July 2010.

touches on local arrangements such as governmental institutions which need to be strong and streamlined towards effective treaty implementation at international level.

The streamlining of institutions at local level to meet international obligations in a treaty with enforcement measures is important in so far as there is always the potential of having toothless treaties with toothless institutions. This explains why Held recommends "the development of law enforcement and coercive capability,"[236] empowering interstate institutions with the effective tools to regulate the shared resource. Cooperation is thus a multi-faceted concept which requires a consideration of a multiplicity of factors at play in the management of transboundary water resources.

After a careful analysis of the dynamics of transboundary water management, Le Marquand[237] came up with five findings on this aspect of cooperation or conflict in transboundary water management in his study as follows:

a) Riparians are better able to solve their respective problems if they have common perceptions of the problem, if win-win solutions are created, and if national leadership is committed to solving the problem;

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[236] Held, D. 2004. *Global Covenant: The Social Democratic Alternative to the Washington Consensus*. Cambridge. Polity Press, p.90.

[237] Le Marquand, 1977, *supra*, note 87.

b) Economic optimization is less crucial to co-operation than non-economic factors;

c) Co-operation is more successful when social concerns and objectives are evaluated and defined in the planning process, and when consequences and costs of alternative strategies are assessed in detail;

d) Co-operation is more successful when agreements are flexible enough to adapt to changing values, technologies, and market conditions; and

e) Reciprocal interests in co-operation are most conducive to problem solving, whereas upstream-downstream problems are the most difficult with which to deal.

Kuffner [238]offers a rather new approach to cooperation in international water management. The author submits that successful cooperation cannot be had if the water is divided and managed separately. Instead, he suggests the interconnection of water systems between states, with the aim of buying and selling water when the need arises, or allowing the transfer of water surplus in one system to an adjacent system. This means that inter-basin transfers should be promoted among or between states sharing a river course as has been done in the Jordan and in Lesotho. It was questionable whether this

[238] Kuffner, U. 1998.' 'Contested waters: Dividing or sharing?', in Scheumann, W. and M. Schiffler (Eds.), 1998. *Water in the Middle East: Potential for Conflicts and Prospects for Cooperation.* Berlin, Heidelberg and New York: Springer-Verlag.

was a feasible means of propagating cooperation because it poses a threat to state sovereignty which is always a central issue to water rights negotiation processes. This point will become much clearer when the principle of equity is considered below. Therefore, Kuffner's work is limited in that regard.

The regime theory has also been used to explain inter-state cooperation since Keohane and Nye's[239] produced a seminal publication on regime theory. The theory has informed the analysis of international arrangements on the Jordan River,[240] the Tigris and Euphrates

[239] Keohane, R.O. and J.S. Nye. 1977. *Power and Interdependence: World Politics in Transition.* Boston: Little, Brown and Company.

[240] Jägerskog, A. 2003) *Why States Cooperate Over Shared Water: The Water Negotiations in the Jordan River Basin*. Linköping, Sweden: Linköping University.

rivers,[241] the Orange River,[242] and the Mekong River,[243] amongst others. Regime theory has more recently fallen out of fashion in favour of environmental governance[244] while

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[241] Kibaroglu, A. 2002. *Building a Regime for the Rivers of the Euphrates-Tigris Rivers Basin. International Water Law and Policy Series*. Brill, Netherlands: Brill Academic Publishers.

[242] Furlong, K. 2006. 'Hidden Theories, Troubled Waters: International Relations, The 'Territorial Trap', and the Southern African Development Community's Transboundary Waters.' *Political Geography,* 2006 25(4): 438 - 458. Raadgever, G. T., E. Mostert, N. Kranz, E. Interwies and Timmerman, JG. 2008. 'Assessing Management Regimes in Transboundary River Basins: Do they Support Adaptive Management?' *Ecology and Society* 2008 13(1):14.

[243] Browder, G. and L. Ortolano, 2000. 'The Evolution of an International Water Resources Management Regime in the Mekong River Basin', *Natural Resources Journal.* 2000 40(3): 499 - 531.

[244] See for example Conca, K., F. Wu and C. Mei, 2006. 'Global Regime Formation or Complex Institution Building? The Principled Content of International River Agreements.' *International Studies Quarterly.* 2006 (50): 263 – 285; Bernauer, T. and Kalbhenn, A. 2008. 'Transboundary Freshwater Resources as Sources of Conflict and Cooperation,' in Geneva Center for Security Policy, Programme on the Geopolitical Implications of Globalisation and Transnational Security. 2008. *Global Crises*. Geneva, pp.26 -38.

cognitivism found its follow up in constructivist approaches – (re)framing, social learning and (de)securitisation.[245]

A general reading of Keohane and Nye's book cited above and following the other authors they quote therein shows that neorealists, liberal institutionalists and cognitivists have found common ground in analysing how hegemonic power,[246] cost-benefit assessments[247]

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[245] Checkel, JT. 1999. *International Institutions and Socialization*. Arena Working Paper WP99/5. Oslo, University of Oslo., Wendt, A. 1999 *Social Theory of International Politics*. Cambridge: Cambridge University Press, Buzan, B. and O. Waever, 2003. *Regions and powers: The structure of international security.* Cambridge, New York: Cambridge University Press; See also Davidsen, P. 2006. *The Making and unmaking of the Politics of Exceptionality: Studying Processes of securitisation and desecuritisation in the Orange River and Okavango River Basins.* Institute for Comparative Politics, University of Bergen, MA Thesis.

[246] Keohane, RO. 1990. *International Liberalism Reconsidered. In: Dunne, John, The Economic Limits to Modern Politics.* Cambridge: Cambridge University Press.

[247] Young, O. 2001. 'The Behavioral Effects of Environmental Regimes: Collective-Action vs. Social-Practice Models,' *International Environmental Agreements: Politics, Law and Economics.* 2001 1(1): 9-29.

and social learning[248] and these can foster cooperation between states as the authors explain. According to the authors, the emphasis of much of the regime and environmental governance literature has relied primarily on an assumption either that the actors involved in transboundary water management may regard themselves as equal or that assumption can translate to actual practice. Further power asymmetry can bring cooperation needed for sustainable transboundary water management. This is a good clue on how to analyse the interactions among the countries involved in Okavango Rover Basin management.

3.5.4 Conflict and cooperation in the Okavango River Basin

Evidently considering the above, with regard to international rivers, general principles of international water law exist but, in practice, they provide very little guidance in resolving

[248] Haas, P. M. and McCabe, D. 2001. 'Learning to Manage Global Environmental Risks', in *The Social Learning Group, Learning to Manage Global Environmental Risks, Volume 1: A Comparative history of Social Responses to Climate Change, Ozone Depletion, and Acid Rain*. Cambridge, London. MIT Press, pp.323 - 348.

transboundary river management problems.[249] Marty[250] notes that "the golden rule of water law (…) says that there is no golden rule." More generally, institutional structures for reconciling conflicting interests at the international level tend to be less sophisticated and less resilient to opportunistic manipulation than their counterparts at the domestic level. At the international level, solutions thus have to be found through consensus-oriented negotiations among riparian countries under conditions that, in many parts of the world, resemble what Realist theorists of international politics have called an anarchical self-help system.[251]

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[249] see Frederiksen, HD., 1992. *Water Resources Institutions: Some Principles and Practices.* Washington D.C. World Bank, Technical Paper No. 1991; Wolf, A. 1997. 'Economic and Political Considerations in Regional Cooperation Models.' *Agricultural and Resource Economics Review*. 1997 26(1):7-22; Marty, F. 1997, *supra*, note 13. Salman SM and LBD. Chazournes (Eds). 1998, *supra*, note 121.

[250] Marty,1997, *supra*, note 13, p.17.

[251] Waltz, KN. 1979. *Theory of International Politics*. Reading, Mass. Addison and Wesley.

The Okavango[252] River which forms the focus area of this study has been a source of controversy between Namibia, Angola and Botswana.[253] Angola and Namibia have proposed water extractions and hydropower development that would threaten the survival of the Okavango Delta in Botswana, a unique habitat for thousands of mammals, birds, fish and other organisms, and an important source of economic income through tourism for Botswana. With increased protest or opposition to these projects from Botswana coupled with lack of alternative solutions, Namibia and Angola have had to shelve their projects to dam the Kavango River.

Shared rivers such as the Kavango are not just associated with conflict. In their study Brochmann and Gleditsch[254] found some evidence that states sharing a river basin also cooperate more than other states, using general joint IGO memberships and trade as

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[252] Notwithstanding that some literature uses the name Kavango (Namibia) or Cubango (Angola) to refer to the river the name Okavango will be used throughout this research since it is the officially accepted and used name by all the three countries - Angola, Namibia and Botswana represented in the OKACOM.

[253] See generally, Turton, A., Ashton, P., Cloete, E. 2003 (eds.), *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin.* African Water Issues Research Unit/Green Cross International/University of Pretoria, Pretoria, pp.32-41

[254] Brochmann, M. and Gleditsch NP. 2006, *supra*, note 6.

measures of cooperation.[255] Yet, in these earlier studies they have looked at conflict and cooperation generally, without asking whether the positive or negative inter-action was specifically related to the sharing of the water resource.

In Botswana including the Okavango Delta, the rights to use and control water resources are somewhat complicated according to Hitchcock,[256] there were cases of conflicts over access to water resources. The Government of Botswana had to intervene to resolve those community conflicts over the natural resources in the area, as they had the potential for disrupting social relations at the local community level and at international level especially on the Namibian side.[257] Events happening in the Kavango delta in Botswana and the agricultural practices along the Kavango River in Namibia and Angola illustrate that community activities or interactions over a transboundary water resource regime can also have repercussions on the events in the neighbouring or riparian state.

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[255] *Ibid*.

[256] Hitchcock, 2010, *supra*, note 57.

[257] *Ibid*.

According to McCaffrey,[258] therefore, as a tentative solution almost all states must cooperate in order to reconcile competing interests over a large percentage of the world's watercourses. According to Rieu-Clark,[259] such cooperation and potential for conflict, is becoming increasingly likely given mounting pressure on the world's water resources. Indeed, the indivisibility and number of international watercourses means that many states have no choice but to cooperate with each other in order to meet their water requirements. Increased pressure on water, coupled with its importance in the social and economic development of a State provides a strong incentive for states to reconcile their competing interests over international watercourses. This requires the application of the principles of transboundary water equity.

Realising the need for more co-operation and equitable water resource allocation and management along the Kavango River, in September, 1994, Angola, Namibia, and Botswana signed an agreement to create the Kavango River Basin Water Commission

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[258] McCaffrey, SC. 1993. 'Water, Politics and International Law,' in Gleick, PH. (Ed.), 1993. *Water in Crisis; Guide to the World's Water Resources*. Oxford: Oxford University Press.

[259] Rieu-Clarke AS. 2004. *A Fresh Approach to International Law in The Field Of Sustainable Development: What Lessons From The Law Of International Water Courses?* PhD International Water Law and Policy International Water Law Research Institute University of Dundee, p.9.

(OKACOM). This is a Trilateral Permanent Water Commission (TPWC) that includes the three countries in order to provide advice on environmentally and socially sustainable development of Kavango River waters. The role of OKACOM is to anticipate and reduce those unintended, unacceptable and often unnecessary impacts that occur due to uncoordinated resources development. To do so, it has developed a coherent approach to managing the river basin. In the process of doing so, they apply the principles of equitable allocation, sustainable utilisation, sound environmental management and the sharing of benefits.

This agreement is very general. In its preamble, it highlights the need for cooperation between and among the member states. It also calls into consideration the concept of 'equitable utilisation of shared watercourses' as a guiding principle in the Okavango River Basin. Further it incorporates the principles applicable to shared watercourses as enshrined in the Helinski Rules, the Agenda 21 of the United Nations Conference on Environment and Development held at Rio De Jeneiro in June 1992. With this it seems OKACOM may significantly enhance integrated regional sustainable development by facilitating the necessary co-ordination and mutually beneficial co-operation among the three nations sharing the natural resources of the Okavango River Basin.

However, the OKACOM agreement evidently fails to recognise the institutional conflicts that exist in the respective countries. Furthermore, the national institutions typically devote most of their attention to large-scale, centralised forms of supply management. Small-scale, decentralised or traditional options tend to be neglected or left to the

communities[260] yet as Hinz[261] asserts, these institutions and their customary laws have great implications for ecosystems.[262] This justifies why the extent to which the agreement recognises traditional water institutions in the Kavango River Basin and what the implications are of that extent of recognition on equitability of water allocation has to be investigated.

Since no research has specifically investigated the successes or failures of OKAKOM it is difficult to ascertain with certainty whether this Joint Commission has been successful or not. However, a review of the scope of responsibilities of Commissions and Joint

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[260] Brooks, T. 2010. '*Negotiating the Chiquita-COLSIBA International Framework Agreement: An unlikely happening*', Available at http://tequilabrooks.com/pdf/2008%20T%20Brooks%20Negotiating%20the%20Chiquita -COLSIBA%20International%20 Framework%20Agreement.pdf, last accessed 20 November 2013.

[261] Hinz MO. 1995. *Customary Land Law and the Implications for Forests, Water and Plants*. United Nations Food and Agriculture Organisation: Windhoek, p.34.

[262] Hinz, M.O. Mapaure, C. 2010. 'Traditional and Modern Use of Biodiversity – Customary Law and its Potential to Protect Biodiversity,' in Schmiedel, U. And Jürgens, N. (Eds). 2010. *Biodiversity in Southern Africa. Volume 2: Patterns and Processes at Regional Scale*. Klaus Hess Publishers, Göttingen and Windhoek, pp.195–199.

Bodies in Africa especially suggests that there is limited institutional experience that can be drawn upon as far as transboundary water equity is concerned. Some guidance may be inferred from a series of conventions relating to the use of shared natural resources. Among these is the highly innovative and prescient 1968 African Convention on the Conservation of Nature and Natural Resources. In Article V (2) of the Convention provides that:

> Where surface or underground water resources are shared by two or more of the Contracting States, the latter shall act in consultation, and if the need arises, set up inter-State Commissions to study and resolve problems arising from the joint use of these resources, and for the joint development and conservation thereof.

However, considered available literature so far, for such co-operation to yield results, there is a need for adequate capacity and institutional strength. Traditionally, transboundary water equity remains dispersed and fragmented in most countries. As Brooks[263] asserts, international agreements and indeed national institutions tend to be insensitive to indigenous practices, gender concerns, ethnic groups and the environmental impacts of the institutional actions. Such organizations merely reflect the concerns of their governments that created them hence it is not surprising that the OKACOM agreement is oblivious to them.

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[263] Brooks, 2010, *supra* note 260.

3.5.5 Transboundary water equity

This study is a critical legal analysis of transboundary water equity in Southern Africa, thus, it follows that apart from the concept of cooperation and conflict the concept of equity is at the heart of the research. Substantial literature has developed which traces the development of this doctrine from pre-Helsinki Rules to the UN Convention and to the development of Agreements at Basin level such as the Okavango River Basin. Older literature concentrates more on its practicability in real state interactions, its formulation in the Helsinki Rules and later its interpretation under the Draft Articles to the Convention and basin level agreements.

3.5.5.1 Development and controversies in meaning

The principle of equitable utilization evolved from early inter-state practice involving watercourses and was part of customary international law. The doctrine is not defined in the legal instruments in which it is used and it is often placed together with the obligation not to cause harm to the other. Sometimes the term ‘equitable’ and ‘reasonable’ are juxtaposed to each other without any precision to their meanings. The 1997 UN Watercourses Convention applies the term “equitable and reasonable” throughout, without providing an explanation of the difference between the terms. We are left to scholarly definitions and discussions for guidelines regarding their meanings.

The principle has been taken to mean that '[e]ach Basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial use of the waters of an international Drainage Basin.'[264] A 'drainage basin' is defined as 'a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters flowing into a common terminus'.[265]

The above definitions would mean that each State which shares an international watercourse has a right, within its own area of jurisdiction, to a reasonable and equitable share in the beneficial utilization of the waters of that part of a river course which passes by its territory. This right is not absolute as it is restricted by the obligation to act reasonably and not to cause harm to the other riparian states. Further the above shows that the concept of transboundary water equity is based on the doctrine of limited territorial sovereignty, a compromise solution, is now widely accepted by states as the basis upon which the substantive rules of the law of international watercourses have evolved.[266]

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[264] see Bogdanovic, S. (Ed). 1999. *International Law Association Rules on International Water Resources*, Belgrade, Yugoslav, Association for Water Law, p.206. See also; Article IV of the 1966 Helsinki Rules of the International Law Associations.

[265] Article II of the 1966 Helsinki Rules.

[266] Tanzi, A. and M. Arcari, 2001, s*upra,* note 111, p.14-15.

Within the context of international watercourses, limited territorial sovereignty means that riparian states enjoy equal rights to the utilisation of an international watercourse, and each riparian State must respect the correlative rights of other riparian states. In this light, the doctrine of limited territorial sovereignty provides the theoretical basis for the main substantive rule of the law of international watercourses that of equitable and reasonable use.[267] As Schwebel,[268] writes that the rule of equitable and reasonable use is well recognised as part of customary international law, as evidenced by international agreements, non-binding instruments, decisions of courts and tribunals, and in the writings of publicists.

The above definitions derived from the phraseology of the previous provisions have not convinced some authors. Opinions among scholars are mixed. There are some who see the Convention as unclear and not offering any guidance to states when it comes to their discretion on the utilisation of transboundary water resources and there are some who though faced with an unclear term see the doctrine as a practical tool to promote state

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[267] *Ibid*.

[268] Schwebel, S. 1980. 'Second Report on the Law of Non-navigational Uses of International Watercourses,' *Yearbook of international Law Commission*, 1980 2(2), U.N. Doc. A/CN.4/332.

cooperation in the management of transboundary water resources. Hey[269] and Biswas[270] point out that the language of the Convention is far from clear or explicit, thereby accomplishing nothing in the way of regulating states' discretionary powers to reach agreement on water related issues. Similarly, Wolf[271] notes that the IWC's language of equity provides no practical guidelines for water allocation, which is arguably one of the most important components of international water treaties. Tarlock hails the doctrine as a useful tool and submits:

> Equitable use is not simply a universal norm; it is a functional doctrine intended to produce a specific result. Equitable use was intended to induce the necessary riparian state cooperation to support the construction of an integrated system of large dams and reservoirs on international rivers. The core idea of sharing international rivers is intended to produce treaties or

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[269] Hey, E. 1997. 'The International Watercourses Convention – To what extent does it provide a basis for regulating uses of international watercourses?', Unpublished Paper presented at *International Water Seminar, Water Law and Policy Programme*, CEPMLP, University of Dundee, June 11-12, 1997.

[270] Biswas, A. 1998. Management of International Waters: Opportunities and Constraints', *International Journal of water Resources Development.* 1998 15(4):429-442.

[271] Wolf, AT. 'Conflict and Cooperation over International Waterways', *Water Policy*. 1998 (1): 251- 265.

> agreements to permit the construction of reservoirs and to distribute the benefits among the riparian states. In short international water laws historic function was to promote large, multi-purpose dam construction, not to induce better water management practices.[272]

Most discussion of equity in transboundary water agreements refers to the 1966 Helsinki Rules or to the 1997 International Water Convention (IWC). Chapter II of the Helsinki Rules is dedicated to "equitable utilization of the waters of an international basin," which should be determined according to at least eleven factors:

a) The geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
b) The hydrology of the basin, including in particular the contribution of water by each basin State;
c) The climate affecting the basin;
d) The past utilization of the waters of the basin, including in particular existing utilization;
e) The economic and social needs of each basin State;

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[272] Tarlock, AD. 2001. *'The Changing Environment of International Water Management Law',* Available at http://www.awra.org/proceedings/dundee01/Documents/Tarlock.pdf. Last accessed 14 July 2010.

f) The population dependent on the waters of the basin in each basin State;
g) The comparative costs of alternative means of satisfying the economic and social needs of each basin State;
h) The availability of other resources;
i) The avoidance of unnecessary waste in the utilization of waters of the basin.
j) The practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
k) The degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.

Somewhat similarly, the International Watercourses Convention (IWC), after establishing the importance of reasonable and equitable utilization, elaborates on the factors relevant to equitable utilization in Article 6. These factors should include:

a) Geographic, hydrographic, climatic, ecological and other factors of a natural character;
b) The social and economic needs of the watercourse States concerned;
c) The population dependent on the watercourse in each watercourse state;
d) The effects of the use or uses of the watercourses in one watercourse state on other watercourse states;
e) Existing and potential uses of the watercourse;

f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect; and

g) The availability of alternatives, of comparable value, to a particular planned or existing use.

Rieu-Clark[273] submits that perhaps a good starting place for understanding how the rule of equitable and reasonable use operates in the context of international watercourses may be the International Law Commission's (ILC) commentary to its 1994 Draft Articles: the commentary is phrased in the following terms:

> In many cases, the quality and quantity of water in an international watercourse will be sufficient to satisfy the needs of all watercourses States. But where the quantity or quality of the water is such that all the reasonable and beneficial uses of all watercourses States cannot be fully realised, a "conflict of uses" results. In such a case, international practice recognises that some adjustments or accommodations are required in order to preserve each watercourse State's equality of right. These adjustments or accommodations are to be arrived at on the basis of equity,

[273] Rieu-Clark, 2004, *supra*, note 254, p.152.

> and can best be achieved on the basis of specific watercourses agreements.[274]

The ILC commentary noted that only 'reasonable and beneficial' uses will be relevant to a determination of what is equitable.[275] Similarly, in *Colorado v. New Mexico,*[276] the US Supreme Court stated that, 'our prior cases clearly establish that equitable apportionment will protect only those rights to water that are reasonably required and applied.' This approach means that before considering whether a use is equitable, States must first determine whether their use of an international watercourse is 'reasonable and beneficial.' If it can be established that a use is not 'reasonable and beneficial' then it will not be protected under international law.

What therefore constitutes a 'reasonable and beneficial use?' Furthermore, the use of the term 'reasonable and beneficial' in the ILC commentary might appear superfluous since

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[274] International law Commission/ILC, 1994. *Yearbook of the International Law Commission*. International Law Commission, p.222

[275] *Ibid*

[276] 459 U.S. 176 (1982). The decisions of the US Supreme Court have proved useful because in transboundary disputes US States are treaty as if they were sovereign, and the Court therefore applies international law in the field of transboundary water disputes Rieu-Clark, 2004, *supra*, note 254, p.151.

all reasonable uses must be beneficial. The US Supreme Court ruled in the case of *Washington v. Oregon,*[277] that for a use to be beneficial the only condition is that the use be of some economic or social value and the degree of value derived from the use is immaterial.

However, Rieu-Clark[278] notes that some beneficial uses may not be considered reasonable if their economic or social value is minimal and they cause a high degree of harm. For example, if Namibia implements an irrigation project which is badly managed within its borders but along the Kavango River which cause widespread erosion and increased sedimentation of the watercourse, such irrigation scheme may not be considered a reasonable use despite the economic or social value derived from the agricultural land irrigated.

Further, the benefit (economic or social value) "is therefore better viewed as a factor to be considered when determining whether a use is reasonable. This is why there is need for specific agreements between or among nations regarding transboundary watercourses."[279] In this light, passive water use, for example, will not qualify as the beneficial use necessary to create and maintain a water right. Only the artificial

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[277] 297 U.S. 517, 527 (1936)

[278] Rieu-Clark, 2004, *supra,* note 254, p.152.

[279] *Ibid.*

application of water constitutes irrigation, and naturally occurring sub-irrigation does not qualify as a 'beneficial use.'[280] Further, beneficial use implies that water is used without waste.

Further, it must be noted that riparian States can be treated as standing in a position of trust to each other. In this context as shall be explained in more detail in the Chapters below where a deeper legal analysis will be done, the maxims of equity are malleable principles that can be flexibly adapted to serve the ends of justice as now perceived. Law and equity have long overlapped in pursuit of their common goal of affording adequate remedies against those placed in a position of trust or confidence when they breach a duty that reasonably flows from that position and it was reasonable and proper that the courts have tended to merge the principles of law and equity.[281] Only when there are different policy objectives should equity engage in its well-known flexibility to achieve a different and fairer result. In *Canson Enterprises Ltd. v. Boughton & Co*.[282] the Canadian Supreme Court said that the fusion of law and equity provides a general, but flexible, approach that allows for direct application of the experience and best features of both law and equity, whether the mode of redress (the cause of action or remedy) originates in one system or the other.

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[280] *Staats v. Newman*, 164 Or.App. 18 (1999).

[281] *Canson Enterprises Ltd. v. Boughton & Co.*, [1991] 3 S.C.R. 534, p.1.

[282] *Ibid*.

Despite the fact that definitions are fuzzy, the principle of transboundary water equity has become part of customary international law regarding the management of transboundary watercourses. As Wouters[283] writes, the law of international watercourses through centuries of State practice has evolved into an effective system which provides a framework for the allocation of uses between States over international watercourses. UNESCO puts it in similar words and says that and says that the law of international watercourses establishes the substantive and procedural "rules of the game" which can be used by States to cooperate and avoid conflict in so far as internationally shared watercourses are concerned.[284]

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[283] See Wouters, P. 1999a. 'The Legal Response to Water Scarcity: The UN Watercourses Convention and Beyond', *German Yearbook of International Law*, 1999 (42): 293 – 336. See also Tanzi, T. and Arcari, M. 2001. *The United Nations Convention on the Law of International Watercourses.* London, The Hague and Boston: Kluwer Law International; and Wouters, P. 1999b. 'The Relevance and Role of Water Law in the Sustainable Development of Freshwater: Replacing 'Hydro-Sovereignty' and Vertical Proposals with 'Hydro-Solidarity' and Horizontal Solutions', Proceedings of Stockholm International Water Institute/ International Water Resources Association Seminar, "Towards Upstream/Downstream Hydro-solidarity", 14 August, 1999.

[284] UNESCO, 2003, *supra*, p.6.

3.5.5.2 Doctrinal Contradictions and Collisions

Some scholars have picked up on Articles 5 and 7 of the Convention. As highlighted above, the provisions say that every riparian State should use an international river in an equitable and reasonable manner and not cause harm to the other. At the same time however upstream riparians are bound to take all reasonable steps to avoid appreciable harm to downstream riparians and downstream riparians have to accept harm which they can reasonably remedy – in other words harm that is under the threshold of significant harm. At the heart of this interaction is the concept of cooperation among States which has been elucidated in detail above.

The language of the Convention has been subject to intense debate. Some authors have said that this pragmatic accommodation of ‘equitable utilization’ and ‘no significant harm’ does not dearly indicate which concept is to be given priority. McCaffrey, concludes that:

> While it is clear that this paragraph does not entirely solve the problem of which rule take precedence, it at least strongly suggests that if a state's use is equitable it should be allowed to continue, even if it causes significant harm to another state. In the latter event, the reformation suggests that the

> harming state would be obligated to minimize that harm to the extent possible and to compensate the other state for any unavoidable harm.[285]

Wouters does a careful comparative review the Helsinki Rules and Articles 5 & 7 of the ILC Draft Articles and comes to the position that the 1994 ILC Draft adopts "the no significant harm rule as the governing norm of watercourse law." In her further elucidation, she says that ILC's requirement "not to cause significant harm remains the governing rule of the entire draft."[286]

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[285] See McCaffrey, S C. 1996. 'An Assessment of the Work of the International Law Commission.' *Natural Resources Journal*, 1996 36(2):297-318. United Nations, 1994. *Report of the International Law Commission on the Work of its Forty-Sixth Session*, U.N. GAOR, 49th Session Supplement. No. 10, U.N. Doc. A/49/10, at 197. see also subsequent publications by Stephen McCaffrey, McCaffrey, SC. 1995. The International Law Commission adopts Draft Articles on International Watercourses. *The American Journal of International Law*. 1995 (89):395-404, pp395, 399.

[286] Wouters, PK. 1996. 'An Assessment of Recent Developments- in International Watercourse Law through the Prism of the Substantive Rules Governing Use Allocation.' *Natural Resources Journal*. 1996 36(2):419-439.

This clearly shows two competing approaches contending for acceptance by the international community. There was no clear consensus on which principle should take precedence over the other hence Article 5 and 7 were both included ion the Convention. The controversies will continue. The principle of equitable utilisation will represent the views of those who subscribe to the concept of limited territorial sovereignty. It mirrors the "principle of the sovereign equality of states"[287] therefore the standard "does not define equitable utilization by referring to a particular state's activities but, rather, by regarding the use in relation to other states' uses of the same river."[288] In this context, equitable share does not mean equal division of the waters. Rather, "it means that all relevant factors such as population, geography, pre-existing uses, or the availability of alternative resources have to be considered in each individual case when allocating water rights"[289]

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[287] Tanzi, A. 1997. 'The Completion of the Preparatory Work for the UN Convention on the Law of International Watercourses', in *Natural Resources Forum*, 21 (4), pp. 239-245, p.242.

[288] Schroeder-Wildberg E. 2002. 'The 1997 International Watercourses Convention – Background and Negotiations.' *Working Paper on Management in Environmental Planning.* Berlin: Technical University of Berlin, Institute for Landscape and Environmental Planning, p.14.

[289] Ibid. see also Lazerwitz, DJ. 1999. 'The Flow of International Water Law: The International Law Commission's Law of the Non-Navigational Uses of International

The obligation not to cause significant harm – the no harm rule – illuminates the principle of *'sic utere tuo ut alienum non laedas'* but regards the equality of states from the protection-orientated side.[290] In this regard it is very much likely that any argument promoting the Rule will concentrate on territorial integrity as opposed to sovereignty. In that light "whatever the level of benefit to other states or to the watercourse generally

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Watercourses.' Available at http://www.law.indiana.edu/glsj/vol1/lazer.htm. Last Accessed 24 August 2010, p.7; Marjon, K. 1997. 'The Protection of International Watercourses as Sources of fresh water in the Interest of Future Generations', in Brans EHP, De Haan, EJ, Rinzema, J. 1997. *The Scarcity of Water: Emerging Legal and Policy Responses.* London, The Hague, Boston: Kluwer International Publishers, pp.80 – 99, p.83.

[290] Gleick, PH. 1993. 'Water and conflict: Fresh Water Resources and International Security.' *International Security.* 18 (1):79 – 112. p.107; Australian *Journal of Public International Law*. 1993 45(87): 361-375.

McCaffrey, S.C. 1993. "Water, Politics and International Law," in PH. Gleick (Ed.), *Water in Crisis; Guide to the World's Water Resources*. Oxford. Oxford University Press, pp.92 – 104, p.98.

arising from the use in question might be."[291] Thus, the no-harm rule limits the sovereign freedom of states to exploit their water resources.[292] According to Tanzi, the specification of harm as 'significant' expresses the inclusion of the *de minimis* rule according to which the co-riparians have the duty to overlook insignificant damage.[293]

Definitions are not always easy in legal circles. The word significant as used in the Convention as reflected above to achieve meaningful results should imply "a threshold above which an activity's harmful consequences become legally relevant to the application of the rule or, in other words, for tolerable state behaviour."[294] As Schroeder-

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[291] Fitzmaurice, M. 1995. "The Law of the Non-Navigational Uses of International Watercourses - The International Law Commission Completes its Draft", in *Leiden Journal of International Law*, 1995 8 (2):361-375, p.368

[292] Arcari, M. 1997. 'The draft articles on the law of international watercourses adopted by the International Law Commission: an overview and some remarks on selected issues', *Natural Resources Forum*, 21(3), pp.169-179, p.173.

[293] Schroeder-Wildberg, 2002, *supra*, note 288, p.15. see also Tanzi 1997, *supra*, note 287, p.115

[294] Schroeder-Wildberg, 2002, *supra*, note 288, p.15. see also Fitzmaurice, 1995, *supra*, note 291, p.366 and Hey, E., 1998. 'The Watercourses Convention: To What Extent does it Provide a Basis for Regulating Uses of International Watercourse?', *Review*

Wildberg, reiterates, the definition of 'significant' is necessary to clear the extent of the limitation to the sovereignty of states. "To answer the question if the consequences of a certain use are significant and therefore prohibited, the qualification of the environmental and economic impacts resulting from this use and the determination of the extent of responsibility for those impacts are necessary."[295] Because this data is difficult to ascertain, the application of the no-harm rule already becomes complicated before the states even started to argue about the threshold of permitted harm.[296]

3.6. Summary

This chapter has reviewed the literature that exists in regards to internationally shared water courses. The general orientation of literature was exhumed followed by an exposition of the regulatory framework that exists, starting from a brief overview of the history that preceded certain rules and international statutes that exists today. The review

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of European Community and International Environmental Law 1998 7(3): 291-300, p.294.

[295] Schroeder-Wildberg, 2002, *supra*, note 288, p.15

[296] Schroeder-Wildberg, 2002, *supra*, note 288, p.15. cf. Caponera, DA. 1985. 'Patterns of Cooperation in International Water Law: Principles and Institutions', Natural *Resources Journal.* 1985 25(4):563-588, p.214; Gleick, P. 1993. 'Water and Conflict: Fresh Water Resources and International Security', *International Security 1993.* (18): 79-112, p.107.

did not lose focus of the fact that this study focuses mainly on a legal analysis of the concept of transboundary water equity. Inherent in this is the consideration of conflict and cooperation in the management of transboundary water resources. This explains why the three concepts – conflict, cooperation, doctrine of equity - have formed the crux of this review.

The literature considered in this review generally shows that conflict and cooperation exist in internationally shared watercourse. It however remains intricate to ascertain with certainty which one is more prevalent than the other. Literature has shown wide ranging interpretations of conflict and cooperation and the doctrine of equity in transboundary waters remains befuddled in jurisprudential and economic as well as political interpretations. Worse is unavailability of literature on what exactly is transpiring in the Okavango River Basin.

Further the literature reviewed above indicates that despite its importance in academic debates and treaty texts, the actual impact of equity on transboundary water treaties remains a subject of dispute. Some say that the IWC's language of equity provides no practical guidelines for water allocation, which is arguably one of the most important components of international water treaties. IWC's application contributes to equitable and sustainable use of international waterways and works to preserve ecosystems. Others, however, are not so optimistic. All sides of the arguments admit however that the

application of the IWC provides a basis for negotiation and facilitates interstate cooperation.

To this end the literature reviewed and some literature to be discovered will be used in a bid to provide answers to the research questions stated in Chapter 1.

Chapter 4

The history and development of the law of internationally shared watercourses in the context the Okavango River Basin

4.1 Introduction

This chapter follows the development of the law of internationally shared watercourses. This will be done in the light of the developments in the relations between the countries sharing the Okavango River. Therefore, this chapter is a combination of the history of water law at global level and water law as it developed inter-state at the level of Okavango River Basin. This combined historical analysis and expose led to the answering of the questions regarding what constitutes an equitable transboundary water agreement and what constitutes an equitable allocation of shared waters. The controversies surrounding this question was decoded and the OKACOM agreement be analysed in the light of international legal principles as they developed over the years.

In the light of the above, this chapter explores the role that international law can play in international water management in the Okavango River Basin. The first parts describe the patterns of customary international law that have developed over the years to coordinate the management of internationally-shared water resources, particularly focusing on the waters of the Okavango River Basin and the latter parts consider the concept of water equity in international law and in the context of OKACOM agreement.

4.2 The development of international water law

4.2.1 Background to international water law

The Okavango River Basin straddles Angola, Namibia and Botswana and as such it is an international watercourse as defined by the UN Convention on Watercourses. This Convention defines an international watercourse as "a watercourse, parts of which are situated in different states."[297] To this end the Okavango River Basin is a legal structure as will be dealt with in more detail below and more importantly its management is governed by international law. International law is defined to mean basically laws governing the relations between states or countries. In international legal phrasing, states are normally referred to as countries or nations. This research uses the term "state".

It suffices to say in connection with international law as defined above that it consists of the sources as mentioned in Article 38[298] of the Statute of the International Court of Justice being: (1) International Conventions whether general or particular establishing rules expressly recognized by 'the contesting states' (2) International custom as evidence of a general practice accepted as law (3) The general principles of law recognised by

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[297] Article 1 thereof

[298] This Article is generally recognised as a definitive statement of the sources of international law. See D'Amato, A. 1971. *The Concept of Custom in International Law*. Cornell University Press. Ithaca, New York.

civilised nations; and (4) Judicial decisions and the teachings of the most highly qualified publicists of the various nations (as subsidiary means for the determination of rules of law).

The term ‘convention’ is used in relation to a multilateral treaty; but at the time Article 38 was drafted the word ‘convention’ denoted any sort of treaty: bilateral, plurilateral or multilateral. And in the context of Article 38 it still has this meaning and will be used as such in this research hence the distinction below between multilateral treaties.

4.2.2 Laws binding on the Countries

4.2.2.1 Indigenous law as it applied before

It is important to mention that before the borders were drawn between the three countries, the Okavango River Basin was largely managed by the traditional communities who managed natural resources including land using customary/ indigenous law. This indigenous law was the law applicable to the management and equitable utilisation of natural resources in the Okavango River Basin and it still remains relevant today hence its inclusion here.

In line with traditional laws, the river surface water such as the water flowing in the river itself, are considered community property which can never be individually owned. Water,

as part of the customary landholding was and is vested in the community.[299] A member of a community or family may be able to utilise the Okavango River which is naturally flowing in the River, without interference from the public or the community in general. However, this right was and is subject to the condition that the community member getting water from the River does not pollute the River or render the water undrinkable for others.

Riparian communities under customary law recognised the right of use of each other. Whereas a traditional community knew that there is a riparian community downstream, they usually agreed, either expressly or through practice, on different spots from where each community may go and fetch its water.[300] The communities manifested the communal ownership in the way they render community services in clearing paths leading to the river body as well as cautioning against the pollution of the point where

[299] Mapaure, C. 2010. *Water Wars: Legal Pluralism and Hydropolitics in Namibian Water Law*. Research Thesis Submitted in Partial Fulfilment of the Degree of Master of Laws (LLM). University of Namibia, p146. See also Mapaure C. 2012. "Who Legally Owns Water In Namibia's Communal Areas? A Critical Analysis of Observations From Empirical Experience", in Hinz, M.O; et al. *Knowledge Lives in The Lake. Case Studies in Environmental and Customary Law from Southern Africa*. Namibia Scientific Society, Windhoek, pp.207-232.

[300] Ibid, p.223.

water is drawn. Customary water rights and the international law riparian rights doctrine discussed below have a strikingly similar basis and incidents, in that:

a) in both instances, the ownership of riparian land is the basis of acquiring water use rights;

b) the lower riparian is equally entitled as the upper riparian to the flow of the water in its natural state and quality; and

c) in a navigable watercourse, the right of navigation of all people, including non-riparians, is acknowledged and guaranteed.[301]

These points are discussed in detail by Kalinoe[302] and here it is safe to conclude that the common law doctrine of riparian rights is not inconsistent with the relevant custom at international law relating to water use rights as known, observed and practiced by communities along the Okavango River since time immemorial.

At African customary law, most traditional communities viewed their community as a microcosm of the macrocosm. The earthly society in the eyes of the community members is a resemblance of the divine community which provides the earthly community with the

[301] Kalinoe, L.K. 1999. *The Common Law Riparian Rights Doctrine and Its Applicability in Papua New Guinea*. UBS Publishers' Distributors. University of Michigan, p.19.

[302] Kalinoe, L. 1998. *Water Law and the Nature of Customary Water Rights in Papua New Guinea*. Unpublished PhD Thesis, University of Wollongong, p.20-22.

life blood it deserves and Okavango waters were such a resource and this view ensured equity in regards to resources found in the river. Further, these cosmologies frequently emphasized as they still do, the inter-relationships between disparate values, both sacred and secular.[303] That cultural trait has direct implications for the spirit of stewardship the traditional communities exhibit in the management of communally-owned resources along the river, and clearly influenced as it still does to local managerial decision-making like the decisions of the traditional leaders, natural resource management practices at community level, and consequent ecological health which means the balance between the available water resources and the way they are utilized.

Therefore, before the advent of colonialism and the laws which it introduced, communities in the Okavango River Basin had ways of ensuring that there was no harm caused to the other community down the stream. For those communities who had an organized or centralized leadership structure such as the Kavango of Namibia and Angola[304] and the Tswana of Botswana, traditional leaders played an active role in the management of Okavango River. Hinz's work spells the point that without traditional

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[303] Mapaure, C. 2010, *supra*. See similar remarks in Wolf, A. 2008. Healing the Enlightment Rift: Rationality, Spirituality and Shared Waters.' *Journal of International Affairs.* 2008 61 (2):51-73.

[304] The Kavango ethnic group are divided by the border between Namibia and Angola.

leaders taking an active role in the management of natural resources, there cannot be sustainability.[305]

The above is an indication of the stark disparity between scientific knowledge and indigenous knowledge. This is very important since as we shall see below, international law often ignores traditional scientific systems and their mythology and cosmologies yet they remain central to the concept of transboundary water equity.

4.2.2.2 Colonial laws and the introduction of international law

It is incontrovertible that international law found its comfortable application on the African continent after colonialism and expansionist projects of Europeans were well settled in their colonial territories. This explains why today watercourses which straddle two or more states are governed by international law with its imperialistic attitude[306] and

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[305] Hinz, MO. 'Communal Land, Natural Resources and Traditional Authority', in D'Engelbronner, K. Hinz M.O and Sindano, J. (eds). 1998. *Traditional Authority in Southern Africa.* Windhoek: New Namibia Books, p.183-88.

[306] See remarks in Schmeier, S. 2012. Governing International Watercourses – River Basin Organisations and Sustainable Governance of Internationally Shared Rivers and Lakes. Earthscan from Routledge. Coming November 2012. Routledge. Available at

Okavango River is no exception. The states through and along which this river flows are all products of colonialism. The boundaries which divide these countries are all products of colonialism. Further the national institutional arrangements in the said countries are have their foundations in colonial water structures.

Against the backdrop of the above it is imperative to consider the historical part of the laws which are in application in the said countries and see how these laws can affect transboundary water equity. This will be followed by an analysis of the law that is binding on the three countries. The combined analysis will assist in answering the role of international law in the management of water resources in Okavango River Basin hence answering the question regarding what constitutes an equitable trans-boundary water agreement and what constitutes an equitable allocation of shared waters.

4.3 Local Water Laws in Angola, Botswana and Namibia

The water laws of the three countries under scrutiny differ to some extent as exposed below. These differences are mainly premised on the fact that the countries have different kinds of legal backgrounds which have determined the type of legal systems they are. The three major legal systems of the world today consist of civil law, common law and

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http://www.routledge.com/books/details/9780415623582/ (payment required)

http://books.google.ch/books?id=96tuXYuUpMcC. Last accessed 23 November 2013.

religious law.[307] However, each country often develops variations on each system or incorporates many other features into the system. Namibia and Botswana follow the Roman Dutch common law system but these systems incorporate elements of civil law and equity. This means that Namibia and Botswana can be regarded as mixed legal systems because they have elements of both the common and the civil legal systems. The Angolan system is largely civil law derived from the Portuguese civil law system.

Alongside, every system will have a legislature that passes new laws and statutes, a judiciary which interprets the law and adjudicate cases and also an executive which makes administrative decisions and executes the law. It is this law which will be exposed below after a brief outline of the historical background of the country.

4.3.1 Republic of Namibia

4.3.1.2.1 The Constitution

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[307] Asaf, V. 2010. 'The Legal Systems in the World the Legal Systems in the World.' Presentation Transcript available at http://www.slideshare.net/guest52c665/the-legal-systems-of-the-world#btnNext. Last accessed 23 November 2011.

The Namibian Constitution is the first statutory instrument to look at in so far as water law is concerned. The term "water" exists only two times in the constitution regarding ownership of the resource, but this does not mean that the constitution does concern itself with water conservation or conservation of internationally shared watercourses. Article 100 stipulates as follows:

> **Article 100: Sovereign Ownership of Natural Resources**
>
> Land, water and natural resources below and above the surface of the land and in the continental shelf and within the territorial waters and the exclusive economic zone of Namibia shall belong to the State if they are not otherwise lawfully owned.

Water thus is owned by the State unless it is lawfully owned. Internationally therefore, it is clear from this Article that even water along the Namibian border with Angola belongs to the State. Therefore, Namibia also owns part of the Okavango River Basin. Further this implies the application of the concept of the border demarcations whereby a country's borders are deemed to be at the centre or deeper most part of the river. It shall be shown below how Namibia ought to behave in managing these waters in terms of the imperatives of international law. The constitution further stipulates in Article 95 that:

> The State shall actively promote and maintain the welfare of the people by adopting, *inter alia*, policies aimed at the following:
>
> (l) maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural

> resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory.

This provision has a bearing on the management of water resources in the country and even on the borders such as the Okavango River Basin. The provision is important in so far as it puts an obligation on the part of the State to ensure environmental health and implementation of environmental laws including water legislation to ensure sustainable growth. The provision is not justiciable in a court of law meaning that this is a non-binding obligation, nevertheless an acceptable policy position.

4.3.1.2. 2 The Water Act of 1956

Regarding the statutes, the law in force at the moment in Namibia is the Water Act of 1954.[308] The Act does not incorporate the law of international watercourses but incorporates some principles found in international water law applicable at local level. This principle is the riparian rights principle. The Act does not satisfactorily define riparian ownership, in terms of Sections 1 and 153 Riparian owner means the owner of riparian land, and owner means the registered owner, including the various

[308] Act 54 of 1956.

representatives of owners, e.g. trustees, but for purposes of loans and subsidies 'owner' excludes a natural person.

The Water Act makes a clear distinction between 'public' and 'private' water. 'Public' water includes

> 'any water flowing or found in or derived from the bed of a public stream, whether visible or not.'[309]

Private water, by contrast, means

> all water that rises or falls naturally on any land or naturally drains or is led onto more pieces of land which are subject of separate original grants, but not capable of common use for irrigation purposes.[310]

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[309] Section 1 of the 1956 Water Act.

[310] The doctrine of supremacy of the Constitution requires that all laws should be subject to, and be consistent with the Constitution, that is, in letter and spirit and purport. The Constitution of Namibia sets out the minimum standards against which existing and future laws or any conduct for that matter must be measured or tested. Water law, be it statutory or common, is no exception to this rule.

Section 6 of the Water Act of 1956 stipulates that there is no private property right to public water, whilst section 5, which addresses private water, vests 'the sole and exclusive use and enjoyment of private water in the owner of the land on which such water is found.'[311] The Act thus gives preferential abstraction rights to the landowners on whose land such water is found.[312] This is known as the riparian rights principle.

Riparian rights existed between riparian owners. The Act does not satisfactorily define riparian ownership, in terms of Sections 1 and 153 Riparian owner means the owner of riparian land, and owner means the registered owner, including the various representatives of owners, e.g. trustees, but for purposes of loans and subsidies 'owner' excludes a natural person.

[311] Ministry of Agriculture, Water and Rural Development, 2000. Namibia Water Resources Management Review: Legislative and Regulatory Frameworks: Theme Report, 2000. Ministry of Agriculture, Water and Rural Development, p.5.

[312] *Ibid*. p.18. Land-based entitlement: Rights to abstract and use public and private water is based on the riparian principle which means that the right to water usage is determined by the location of the water resources in relation to the land.

Legal and environmental scholars have defined the riparian right as a right vested in the owner of a land that is situated near a river, stream or watercourse.[313] Under the 1956 Act, the right to use water on an adjacent or upper land was considered as a natural right. Further, under the 1956 Act it was recognized that an upper riparian owner/water user has the right to use as much water as possible without diminishing the quantum enjoyed by a lower riparian owner/water user. If a lower riparian owner/water user feels that there is a reduction in water availability or flow, such aggrieved person can seek remedial measures in a water court. This was held in 1986 in the case of *GJO Boerdery Ondernemings Edms Bpk v Bloemfontein Municipality* (2).[314] This is because the rights of such aggrieved person to equitable and non-harmful use of water as riparians would have been negatively affected and that gives rise to a claim for compensation, interdict or other remedies depending on the facts of the case.

Similarly, a lower riparian does not have right to flood the lands of the upper riparian by building a dam on a river. As regards drainage, an upper riparian has the right to drain excess water through channels without affecting the lower riparian's lands. It is to be noted that all riparian rights are applicable to only natural water sources and not to

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[313] Rajagopal, A., and Janakarajan, S. 'State in Perplexity: The Politics of Water Right and System Turnover in Tamilnadu', Paper presented at *Water, Law and the Commons,* 8-10 December 2006, New Delhi, p.16.

[314] 1988 Uys WLC 373 A.

artificial canal or watercourses. Riparian rights continue to have relevance even today. They have not been lost in the process of development of the society.

4.3.1.2.3 The Water Resources Management Act of 2004

Despite the thrust of Article 95 of the Constitution, the Government did not change the 1956 Act but continued it until 2004 when a new Act, the Water Resources Management Act was passed. At the time of this study, this Act had not come into force, thus Namibian water law was still based on the 1956 Act. The 2004 Act provides an integrated enabling legislative framework within which Namibia's water resources could be managed, and water services provided.

This Act had not come into force in Namibia but it is important to mention that the Act incorporates the law of international water courses. Of great importance are the provisions of Section 53 which outlines the position of Namibia in so far as the law of internationally shared watercourses is concerned.

> 53. Internationally shared water resources[315]

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[315] According to section 1, an internationally shared water resource is defined to mean a water resource that is shared by Namibia and its neighbouring states and other riparian states and a "Watercourse" is defined to mean:

(d) a river or spring, and includes the base flow of an ephemeral river at the time of no visible surface flow;

In its dealings with neighbouring states and other riparian states in relation to internationally shared water resources, the Republic of Namibia-

a) exercises its rights, and observes and complies with all its duties as conferred and imposed upon it by any international treaty, convention or agreement to which it is a signatory; and
b) must uphold such principles and rules of customary international law as are accepted and observed by all nations and as are reflected in the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses; and
c) the Southern African Development Community Protocol on Shared Water Courses.[316]

(e) a natural channel in which water flows regularly or intermittently;

(f) an estuary, wetland, lake or dam into which, or from which, water flows;

(g) any collection of water which the Minister declares under [the Act] to be a watercourse, (See section 1).

[316] These international instruments are binding on Namibia.

This provision basically reaffirms Namibia's willingness to abide by the imperatives binding upon her under international law in so far as those conventions are signed by Namibia. Below the above mentioned Convention and Protocol will be analysed in more detail and in the context of transboundary water equity.

The Act goes on to stipulate the powers of the Minister responsible for water, in regards to internationally shared watercourses. Section 54 says that the Minister has the power to participate with riparian states in the establishment and continuous development of a common database regarding the description and use of shared water resources.[317]

Further the Minister has the power to engage in the joint management, planning and development of joint projects with other basin states within the Southern Africa Development Community for the purpose of promoting economic growth, environmental integrity and common understanding.[318] This power enables the Minister to promote cooperation among states sharing a watercourse such the Okavango River. Connected to this cooperative measure the Minister is empowered to establish and promote institutional relationships between river basin organisations within Namibia and international river basin organizations.[319]

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[317] Section 54(a).

[318] Section 54(b).

[319] Section 54(c).

In terms of the Act,[320] the Minister is enjoined to ensure the participation of interested persons in the development of Namibia's position concerning internationally shared water resources, to develop and improve Namibia's capacity for participation in shared water resource consultations and international river basin organisations; and to establish mechanisms, or participate in the re-establishment of mechanisms, for the prevention, management and resolution of disputes relating to internationally shared water resources.

The Act goes on to provide for the collection of data concerning internationally shared watercourses.[321] In terms of section 55(1) the Minister has the obligation to collect and analyse data including, among others, the volume of water abstracted and beneficially used within Namibia from each shared watercourse,[322] the nature of the beneficial uses within Namibia supported by each shared watercourse, including the economic value of the uses,[323] the number of persons within Namibia who rely upon each shared watercourse for domestic, agricultural or industrial purposes[324] and the relevant date or dates upon

[320] Section 54(e).

[321] Section 55.

[322] Section 55(a).

[323] Section 55(b).

[324] Section 55(c).

which the abstraction of water from each shared watercourse for beneficial use within Namibia commenced.[325]

In line with Namibia's obligation not to cause harm to other riparian nations, the Minister is obliged to gather data regarding the volume and composition of waste discharged from within Namibia into each shared watercourse, the relevant date or dates upon which the discharge into each shared watercourse commenced, the estimated waste load capacity of each shared watercourse, the availability and reliability of alternative means of waste disposal within Namibia if discharged into a shared watercourse are curtailed; and the increases in demand for the waste load carrying capacity of each shared watercourse reasonably expected to occur in Namibia in the foreseeable future.[326]

4.3.2 Republic of Botswana

4.3.2.3.1 The constitution

Botswana, like many modern democracies, has a liberal democratic constitution based on human rights dignity and equality for all. This constitution does not have a specific provision for water. It however has provisions which touch on natural resources in general, for example Section 8 provides for the right to property but such right is protected

[325] Section 55(d).

[326] Section 55(g) – (k).

in so far as there is no state need to develop other natural resources such as water. Section 7 provides for the right not to be subjected to inhuman and degrading treatment. In 2011, the Botswana High Court was of the opinion that the government of Botswana violated the Constitution by denying an indigenous community access to water. The right to access to water was interpreted as an integral part of the right to dignity and freedom from inhuman and degrading treatment.[327]

4.3.2.3.2 The Water Act Chapter 34.01[328]

This is the major piece of legislation which regulates water utilization in the country. The Act consists of 37 Sections divided into 8 Parts.[329] Section 3 makes provision for the establishment of the Water Apportionment Board. Part II of the Act and makes provisions concerning rights in respect of water and related matters. Riparian rights principles do exist under this Act just like in Angola and Namibia.

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[327]The Constitution of Botswana sec 7. See the case of Court of Appeal of the Republic of Botswana *Matsipane Mosetlhanyane & Ors v The Attorney General* (2011) Civil Appeal No. CACLB-074-10 held at Lobatse.

[328] Also referred to as the Water Act 62 of 1968.

[329] Preliminary (I); Ownership of and inherent right to the use of public water (II); Recording of existing rights (III); Grant of water rights (IV); Revision, variation, determination and diminution of water rights; Miscellaneous powers; Appeals (VII); Miscellaneous (VIII).

The Act also provides for public and private water ownership and section 4 declares that, the prevailing rule of law shall be that there exists no right of property in public water and the control and use thereof shall be regulated by this Act or in accordance with provisions of the Waterworks Act. Further, no person is allowed under the Act, to divert, dam, store, abstract, use, discharge any effluent into, public water except in accordance with a water right granted under the Act.[330] With regards to private water, owners and occupiers of land may, without a water right, sink or deepen wells or boreholes and construct works for the conservation of public water, subject to restrictions set out in section 6. Under this Act, a holder of a water right may request under specified circumstances the creation of servitude for the benefit of his/her water rights.[331]

4.3.2.3.3 Laws affecting international watercourses

Given the fact that the water law applicable in Botswana was enacted in the 1960s it is hardly surprising that Botswana does not have a provision in its laws which show its determination to cooperate in internationally shared watercourses. Unlike Namibia and Angola, Botswana's laws are mainly locally based and they do not show the basic

[330] Section 9.

[331] For further analysis see Kranz, N., E. Interwies, A. Vorwerk, and A. von Raggamby. 2005. *Governance, Institutions and Participation in the Orange-Senqu River Basin.* Report to the NeWater Project, Berlin, 2005.

principles regarding how the country will engage itself in dealing with other nations in transboundary water equity. This is clearly shown by SADC where it says:

> Botswana does not have a formal policy framework for transboundary natural resource management. However, the country has shown commitment to promote the equitable and beneficial use of international watercourses.[332]

Botswana has however engaged itself in concluding the OKACOM with the neighbours that shares the Okavango River Basin with. Pursuant to this, an International Water Office was established within the Department of Water Affairs to address issues related to Transboundary Rivers.[333]

4.3.3 Republic of Angola

4.3.3.2.1 The Constitution

[332] SADC/Southern African Development Community. 2003b. 'Botswana.' *Water Policy Review*. 2003 (30):30.

[333] Orange-Senqu River Commission (ORASECOM). 2007. *Legislation and Legal Issues Surrounding the Orange River Catchment.* WRP Consulting Engineers, Jeffares and Green, Sechaba Consulting, WCE Pty Ltd, Water Surveys Botswana (Pty) Ltd, p.33.

The Angolan constitution includes two major Articles which touch on water law at national level. In terms of the Constitution of Angola all water resources are vested in the State. Article 12 and 24 provide a foundation for the implementation of sustainable water laws. The Articles are reproduced below.

Article 12

1) All natural resources existing in the soil and subsoil, in internal and territorial waters, on the continental shelf and in the exclusive economic area, shall be the property of the State, which shall determine under what terms they are used, developed and exploited.
2) The State shall promote the protection and conservation of natural resources guiding the exploitation and use thereof for the benefit of the community as a whole
3) Land, which is by origin the property of the State, may be transferred to individuals or corporate bodies, with a view to rational and full use thereof, in accordance with the law.
4) The State shall respect and protect people's property, whether individuals or corporate bodies, and the property and ownership of land by peasants, without prejudice to the possibility of expropriation in the public interest, in accordance with the law.

Article 24

1) All citizens shall have the right to live in a healthy and unpolluted environment.
2) The State shall take the requisite measures to protect the environment and national species of flora and fauna throughout the national territory and maintain ecological balance.
3) Acts that damage or directly or indirectly jeopardize conservation of the environment shall be punishable by law.

Angola is thus directly bound by its own Constitution to enforce these provisions. Further, in order to implement the provisions in a more comprehensive manner Angola passed the Environmental Framework Law in 1998. This Act will be dealt with in more detail below.

4.3.3.2.2 Local legislation and policies

4.3.3.2.3 Water Act 6 of 2002

This Act covers both integrated water resource management and water supply. Specific provisions of the law are determined in subsidiary legislation.[334] This law makes

[334] SADC Water Sector and ICP Colerboration Portal, 2010. 'Kunene River Awareness Kit', Available at: http://www.kunenerak.org/en/governance/water+governance+in+the+kunene+basin/national+policies+and+laws/angola.aspx. Last accessed 23 June 2010.

provision for a private sector entity to be granted a water right, and then to apply for a licence or a concession to use water. The "most common situation is for a licence to be granted for a renewable period of 15 years, whereas a concession is more significant in several respects, and is granted for up to 50 years."[335]

This Act further establishes the state as the custodian of the country's water resources and enjoins the state to prioritise the use of water resources within the boundaries of Angola. As custodian, the state is responsible for administering the water user rights system.[336] The Act also acknowledges the rights of the individual and entities to water. It goes on to encourage community participation in integrated water resource management and institutional co-ordination.[337]

Articles 19 and 76 of this Act refer to trans-boundary water resources and the establishment of basin committees. Further these provisions emphasised the importance of co-operation between neighbouring countries and prudent utilisation of water resources. Article 19 provides information with regards to international co-operation in

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[335] *Ibid*

[336] South African Institute of Environmental Assessment, (SAIEA). 2012. 'Angola', South African Institute of Environmental Assessment (SAIEA),' available at http://www.saiea.com. Last accessed 12 November 2012.

[337] *Ibid*.

water management and Article 76 highlights the importance of Angola's need to fulfil its domestic obligations, without compromising any ratified international agreements.[338]

These Articles clearly state that Angola regards transboundary co-operation as being of cardinal importance: Article 19 gives Angola's objectives with respect to international cooperation in water management as follows:

a) adoption of co-ordinated measures for the management of water resources in shared catchment basins, taking into account the interests of all states in the basin;
b) just and reasonable allocation of common water or its joint use, in conformity with the interests and obligations assumed by the Republic of Angola; and
c) control of water quality and soil erosion.[339]

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[338] See also comments by in Kunene River Awareness Kit. 2012. 'Namibia: Current Legislation Regulating Water in Namibia.' Kunene River Awareness Kit, available at http://www.kunenerak.org. Last accessed 23 June 2012. See also Malzbender, D.*et al,* 2012. 'Environmental Protection and Sustainable Management of the Okavango River Basin (EPSMO) Governance Review', The Permanent Okavango River Basin Water Commission (OKACOM), available at, http://iwlearn.net. Last accessed 23june 2012

[339] *Ibid*.

This provision is very much comparable to Namibia's local provision as well but does not have an equivalent of Botswana's local laws as shall be shown below. Furthermore, Article 76 states that the provisions of the Water Law should not compromise the fulfilment of Angola's obligations in any already ratified international agreements.

This is a very important and useful provision in Angolan law which means that Angola cannot hide behind its legislation to justify lack of cooperation at international level under the Vienna Convention on the Law of Treaties. Thus Angolan law is trumped by International law in so far as cooperation in international water management is concerned including management of water resources in the Okavango River Basin. Reinforcing this is the point that while protecting national interests, the National Water Directorate in the Ministry responsible for water is empowered to promote international co-operation in order to ensure adequate management of shared hydrological basins.[340]

> The Water Sector Development Strategy reinforces this orientation to international cooperation, placing additional emphasis on integrated water resource management as a means to ensure longer-term environmental sustainability. Integrated catchment management plans are to be drawn up

[340] See also: Neto, J. and ACADIR-Angola 2009. 'IWRM Survey and Status Report: Angola.' March 2009. available at http://www.gwp.org/Global/GWP-SAf%20Files/Angola%20IWRM%20report.pdf . Last accessed 12 June 2011.

> for all major catchments. These will facilitate fruitful dialogue with neighbouring states. [341]

In connection to this the Law Delimiting Sectors of Economic Activity, specifies in Article 13 that the "collection, treatment and distribution of drinking water through fixed networks" and the provision of "basic sanitation" are areas of "relative reserve".[342] This implies that companies or other forms of private entities can participate in these sectors through fixed term concession contracts with the State.

4.3.3.2.4 The Environmental Framework Act

The Environmental Framework Act is based on two articles from the Angolan Constitutional Law, namely Article 12 and Article 24. Article 12 of the Constitution of the Republic of Angola[343] stipulates as follows;[344]

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[341] Ibid. see also SADC/Southern African Development Community. 2000. *Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region*. SADC.

[342] Law 13/94, recently revised and published as Law 5/02 on 16 April 2002

[343] In Portuguese: *Lei Constitucional da República de Angola*

[344] South African Institute of Environmental Assessment (SAIEA), Angola', South African Institute of Environmental Assessment (SAIEA), available at, http://www.saiea.com. Last accessed 16 February 2012.

- all natural resources existing in the soil and subsoil, in internal and territorial water, on the continental shelf and in the exclusive economic area, shall be the property of the State, which shall determine under what terms they are used, developed and exploited.
- the State shall promote the protection and conservation of natural resources guiding the exploitation and use thereof for the benefit of the community as a whole.
- land, which is by origin the property of the State, may be transferred to individuals or corporate bodies, with a view to rational and full use thereof, in accordance with the law.
- the State shall respect and protect people's property, whether individuals or corporate bodies, and the property and ownership of land by peasants, without prejudice to the possibility of expropriation in the public interest, in accordance with the law.

Article 24, stipulates that all citizens shall have the right to live in a healthy and unpolluted environment. In terms of the same provision, the State has a binding obligation to take the requisite measures to protect the environment and national species of flora and fauna throughout the national territory and maintain ecological balance of any activities that can damage, directly or indirectly jeopardise conservation of the environment shall be punishable by law.

Based on these two articles, the Environmental Framework Act outlines the definitions of key concepts relating to the importance of environmental protection, conservation, the rights of the individual to an environment that is not harmful, as well as international sustainable development declarations. This, without doubt, includes the management and utilisation of water resources in the Okavango River basin.

4.5 International Treaties relevant to the three states

Having considered the development of the principle of transboundary water equity in customary international law, it is now important to see how it has taken its place in bilateral and multilateral agreements binding upon the three countries under consideration. This part will thus aid in answering the question whether the inclusion of transboundary water equity or equitable principles in international agreements will ensure co-operation or conflict. The major concentration here is not to provide a whole summation of the entire documents but to extract some parts which deal with transboundary water equity and co-operative arrangements.

Seeing that there is need for a well formulated legal framework to regulate state actions in regards to the utilisation of transboundary watercourses, the United Nations embarked on a mission to codify international norms in this area. The UN thus requested the International Law Commission (ILC) to codify and progressively develop the rules applicable to the development and management of international watercourses. The

Commission started this project and it proceeded for almost three decades until a Convention was adopted by the General assembly of the United Nations.

The first attempts to regulate the utilization of international watercourses for purposes other than navigation were made in 1966 when the International Law Association (ILA) published its Helsinki Rules. In 1992, the Economic Commission for Europe (ECE) adopted the 'Convention on the Protection and Use of Transboundary Watercourses and International Lakes' (Helsinki Convention). Five years later, on 21st May 1997, the United Nations General Assembly (GA) adopted the Convention on the Law of the Non-Navigational Uses of International Watercourses by an overwhelming majority of states. By this stage, there had been a delay of 27 years from the first dealing with the topic on the United Nations' (UN) level in 1970, partly caused by the difficulty of resolving legal and hydrologic intricacies by the International Law Commission (ILC).

4.5.1 Ramsar Convention on Wetlands of International Importance, 1971

The Convention on Wetlands of International Importance, which is also called the Ramsar Convention, was adopted in the Iranian city of Ramsar in 1971. It is an International Convention which provides for a framework for national action and international

cooperation for the conservation and wise use of wetlands and their resources. It is the only treaty in the world which deals with a specific ecosystem.[345]

The Convention binds Botswana and Namibia. Angola has not ratified the Convention. The fact that Angola is not bound may pose difficulties when it comes to how the three countries should cooperate in protecting the Okavango Delta in Botswana which was declared a wetland under the Convention. This may imply that the cooperative arrangements under the convention may not effectively be implemented hence an effect on the no harm rule and transboundary water equity in the Okavango River Basin since the Convention provides in Article 5:

> The Contracting Parties shall consult with each other about implementing obligations arising from the Convention especially in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties. They shall at the same time endeavour to coordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna.

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[345] UN International Year of Family Farming, 2012. 'The Ramsar Convention on Wetlands of International importance.' *UN International Year of Family Farming*. Available at: http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0__. last accessed 23 September 2012.

Under the Convention therefore Namibia is bound to contribute to the conservation of the Okavango Delta since some 3% of the water that enters the Okavango Delta originates within Namibia's borders.[346] It is even more worrying that Angola is not yet a signatory yet 94% of the water that flows into the Delta comes from Angola.[347] Therefore if Angola has some projects which affects the delta downstream the other riparians or Botswana in particular cannot invoke the provisions of the Convention against Angola. In this light, what can be said is that even though the Convention aims at protecting ecosystems such

[346] See Ashton, P; Neal, M. 2003. "An overview of key strategic issues in the Okavango Basin", in Anthony, R. Turton, Ashton, P., and Cloete, TE. (Eds.), *Transboundary rivers, sovereignty and development: Hydropolitical drivers in the Okavango River Basin,* Pretoria and Geneva. AWIRU & Green Cross International, pp31-63, p43; Wilson, BH and Dincer, T. 1976. An Introduction to the Hydrology and Hydrography of the Okavango Delta. *Proceedings of the Symposium on the Okavango Delta and Its Future Utilization*. Gaborone: Botswana Society; McCarthy, TS. & Ellery, WN. 1998. 'The Okavango Delta.' *Transactions of the Royal Society of South Africa.* 53(2):157-182.; Ashton, P.J and Manley, R.E. 1999. 'Potential Hydrological Implications of Water Abstraction from the Okavango River in Namibia.' *Proceedings of the Ninth South African Hydrological Symposium*. Stellenbosch: University of Stellenbosch.

[347] Hitchcock, 2010, *supra,* note 57.

as the Delta region, there is no guarantee of cooperative relations between the nations as some are not bound by important conventions such as this one.

Pinheiro has described Angola as *"the sleeping giant*" in the sense that water resources in Angola are relatively unexploited. Future developments, however, could have serious consequences to the water availability of the downstream countries.[348] Therefore the mere existence of a convention encouraging cooperative arrangements and equitable utilisation does not guarantee transboundary water equity. This in turn implies potential conflict between or among riparians as opposed to cooperation potential. The ray of hope in this context only exists in the implementation of the OKACOM agreement to be analysed in Chapter 7 below and the political relations of the concerned states.

[348] Pinheiro, I., Gabaake, G., and Heyns, P. 2003. "Cooperation in the Okavango River Basin: The OKACOM perspective", in Turton, A., Ashton, P., Cloete, E. (Eds.), *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin.* African Water Issues Research Unit and Green Cross International/University of Pretoria, Pretoria, pp.105–118.

4.5.2 Convention on the Law of the Non-Navigational Uses of International Watercourses (Watercourse Convention)

4.5.2.1 Background to the convention

In November 1959, the United Nations General Assembly passed a resolution wherein it said that it was "desirable to initiate preliminary studies on the legal problems relating to the utilization and use of international rivers with a view to determining whether the subject is appropriate for codification."[349] The Resolution requested the Secretary General of the UN to prepare and circulate to the member states a report containing: [350]

a) information provided by member states regarding their laws and legislation in force on the matter;
b) a summary of existing bilateral and multilateral treaties;
c) a summary of decisions of tribunals, including arbitral awards; and
d) a survey of studies made by non-governmental organizations concerned with international law. The Report[351] was worked on and widely circulated but it took until 1970 for the General Assembly to look at the issue again.

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[349] Resolution 1401(XIV).

[350] *Ibid*.

[351] UN/United Nations. 1963. *Legal Problems Relating to the Utilization and Use of International Rivers*, Report of the Secretary-General, A/5409, 15 April 1963.

In December 1970, the United Nations General Assembly adopted a resolution which encouraged the initiation of "preliminary studies on the legal problems relating to the utilization and use of international rivers with a view to determining whether the subject is appropriate for codification." Further this Resolution encouraged the International Law Commission to "take up the study of the law of the non-navigational uses of international watercourses with a view to its progressive development and codification."[352]

Just as the resolution recommended, the International Law Commission embarked on the work to produce the Convention codifying international law of transboundary watercourses. The Commission did this with the assistance of rapporteurs and by sending questionnaires to member states for their input.[353] It took 23 years, five rapporteurs, and

[352] UN/United Nations, 1970, *General Assembly Resolution 2669*, U.N. GAOR, 25th Session, Supp. No. 28, p. 127, U.N. Doc. A/802, United Nations, New York. The Resolution was entitled "Progressive Development and Codification of the Rules of International Law Relating to International Watercourses."

[353] McCaffrey, S. 2011. 'Convention on the Law of the Non-Navigational Uses of International Watercourses.' United Nations: Codification Division, Office of Legal Affairs. New York.

fifteen reports before the final draft articles of the Convention were agreed upon by the Commission in 1994.[354]

The General Assembly decided in 1994 to "convene a Working Group of the Whole . . . to elaborate a framework convention on the law of the non-navigational uses of international watercourses on the basis of the draft articles adopted by the International Law Commission." The convention was negotiated in the Sixth Committee, convening for this purpose as a "Working Group of the Whole" as contemplated by the Assembly's 1994 resolution.[355] The Working Group met for three weeks in October of 1996 and two weeks in March and April of 1997. [356] The General Assembly adopted the Convention on 21 May 1997.[357]

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[354] Salman, SMA. 2007. 'The United Nations Watercourses Convention Ten Years Later: Why has its Entry into Force Proven Difficult?', *IWRA, Water International.* 2007 32(1): 1-15.

[355] McCaffrey, S. 2011, *supra,* note 353.

[356] *Ibid*.

[357] United Nations General Assembly. 1997. *General Assembly Adopts Convention on Law of Non-Navigational Uses of International Watercourses,* Press Release GA/9248, May 21, 1997.

4.5.2.2 Salient provisions of the Convention

The Watercourse Convention is a very important Convention for it is intended to specifically be a framework convention regulating the utilization of internationally shared watercourses. The Convention was open for signature from 21 May 1997 until now there has not been the requisite number of signatories to put it in force.[358] As of 13 April 2011,

[358] Article 36provides: (1) "The present Convention shall enter into force on the ninetieth day following the date of deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession with the Secretary-General of the United Nations. (2). For each State or regional economic integration organization that ratifies, accepts or approves the Convention or accedes thereto after the deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the deposit by such State or regional economic integration organization of its instrument of ratification, acceptance, approval or accession. 3. For the purposes of paragraphs 1 and 2, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States."

there were 24 Parties[359] to the Convention, and an additional 5 states[360] that had signed but not yet ratified the treaty. Namibia ratified the Convention[361] Angola and Botswana are neither state parties nor signatories.

The Convention provides for the equitable and reasonable utilization of waters. Article 5 enjoins states to use watercourses in an 'equitable and reasonable manner.' Article 5 also provides for, the principle of 'equitable participation.'[362] According to this principle, States are to "participate in the use, development and protection of an international watercourse in an equitable and reasonable manner". This principle is a further elaboration of the equitable and reasonable utilization principle which requires states to act in a positive manner in the management of transboundary water resources. Article 6 lists seven factors in no particular order relevant to the determination of what is equitable and reasonable.

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[359] Burkina Faso, Finland, France, Germany, Greece, Guinea-Bissau, Hungary, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco, Namibia, Netherlands, Nigeria, Norway, Portugal, Qatar, South Africa, Spain, Sweden, Syrian Arab Republic, Tunisia, Uzbekistan,

[360] Côte d'Ivoire, Luxembourg, Paraguay, Venezuela (Bolivarian Republic of) and Yemen.

[361] Signed on 19 May 2000 and ratified on 29 Aug 2001.

[362] Paragraph 2.

Article 7 provides for the obligation of any state not to cause significant harm to other riparians in the transboundary watercourses. Thus, states are enjoined to "take all appropriate measures to prevent the causing of significant harm." This is a preventative measure which is aimed at minimizing any potential harm and promotes cooperation as opposed to conflict. As noted in the literature review above, the principles have been viewed as conflictive but some authors see them as complementary. As McCaffrey says:

> While there has been debate, both in the negotiation of the Convention and in the literature, about the relationship between the principles set forth in articles 5 and 7, the two are best seen as being complementary. The two articles work in tandem in the following way: if a State believes it has sustained significant harm due to a co-riparian State's use of an international watercourse, it will ordinarily raise the issue with the second State. In the negotiations that follow, articles 5, 6 and 7 in effect provide that the objective is to reach a solution that is equitable and reasonable with regard to both States' uses of the watercourse and the benefits they derive from it. The possibility that the solution may include the payment

> of compensation, to achieve an equitable balance of uses and benefits, is not excluded.[363]

The third part of the Convention provides for prior notification procedures. This part sends a message that a state which plans to undertake a project on a transboundary watercourse and such project is anticipated to cause significant harm on the other riparian state, such state envisaging a project is required to give notice to the other. If the other notified state is of the opinion that the envisaged project will be inconsistent with the provisions of Article 5 and 7 dealt with above, the two States should start consultations and or negotiations.

The Fourth part of the Convention deals with environmental aspects of the transboundary water basin. Among these aspects are the ecological preservation and pollution control. It goes on to provide for consultations in regard to the management of water resources in the transboundary water basin. The general inclination of the convention is conflict prevention and environmental conservation. These aspects mean that the General Assembly was in general agreement that this framework convention will be a tool to encourage cooperation in the utilization of transboundary water resources.

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[363] McCaffrey, S. 2011. Convention on the Law of the Non-Navigational Uses of International Watercourses. *United Nations:* Codification Division, Office of Legal Affairs. New York.

It is however difficult to understand why the requisite number of states has not ratified the convention more than ten years after this convention was adopted by the General Assembly. This delay may imply that the simple adoption of a framework convention addressing equitable utilization of transboundary waters does not entail cooperative interaction among the states which adopted the convention itself. This may show why bilateral agreements have become a common tool among states. Some relevant ones will be looked at below.

4.5.3 Revised Protocol on Shared Watercourse Systems in the SADC Region

4.5.3.1 Background to the Protocol

This Protocol is a product of efforts by the SADC Member States in regulating transboundary water resources. The history of the Protocol dates back to the discussions of countries which share the Zambezi River, one of Southern Africa's longest rivers. These discussions started in the mid 80s. In this process more and more interest developed in regulating all internationally shared rivers in southern Africa. This led to the review of all water related legislation in the region. As Mvalo[364] writes:

[364] Mvalo, T. 1999. Harmonization of National Laws with the SADC Protocol on Shared Watercourse Systems. Report Prepared for the Water Sector Coordinating Unit of the Southern African Development Community (SADC) with support from the United

> The Protocol was the culmination of a review of national legislation within SADC, as well as international legislation, followed by preparation of reports specific to each SADC country, indicating strengths and deficiencies of each country's national legislation. The review of national legislation at that time excluded South Africa, Mauritius, Seychelles and the Democratic Republic of Congo, which at that time were not members of SADC. Review of legislation was followed by preparation of a draft protocol on shared watercourse systems covering areas in which agreements among countries in the SADC region were required. The reports and the draft protocol were discussed at a meeting of legal experts in Livingstone, Zambia, in April 1993. Thereafter, a revised protocol was prepared which, after passing through and obtaining the approval of the SADC Council of Ministers, was ultimately signed by the Heads of State at Johannesburg, South Africa, on 28th August 1995. The Protocol entered into force in September 1998 after receiving two-thirds majority ratifications of the eleven (11) preambular member states.[365]

States Agency for International Development Regional Center for Southern Africa (USAID/RCSA). June 1999. Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ). USA.

[365] Namely Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

Every Member State to the SADC has signed the Protocol. However, of the three states sharing the Okavango River Basin, only Angola has not ratified it. This is a worrying situation which may imply lack of the expected cooperation under the convention by Angola since it is not bound like others.

4.5.3.2 Key Provisions of the Protocol

The provisions of the Protocol are very much similar to the provisions of the UN Watercourses Convention dealt with above. The interesting part is that it is a purely Southern African initiative and took into consideration developments at international level and the municipal laws of the specific member states. To this end it can be emphasized that this Protocol is a milestone in the development of SADC Water law.

The Protocol also provides for the equitable and reasonable utilization of water resources. In terms of Article 1, "[t]he utilisation of shared watercourse systems within the SADC Region shall be open to each riparian or Basin State, in respect of the watercourse systems within its territory and without prejudice to its sovereign rights, in accordance with the principles contained in this Protocol. The utilisation of the resources of the watercourse systems shall include agricultural, domestic, industrial and navigational purposes. This is one strategic principle which draws the parameters of the application of the Protocol right at the outset.

Further the Protocol states in Article 2 that Member Sates undertook "to respect and apply the existing rules of general or customary international law relating to the utilisation and management of the resources of shared watercourse systems and, in particular, to respect and abide by the principles of community of interests in the equitable utilisation of those systems and related resources". This provision is a very important one in the sense that if one state violates one provision of the Protocol then this Article is also automatically violated.

More relevant to the topic under research is the point that the Protocol has a provision which says that "[M]ember States shall utilise a shared watercourse system in an equitable manner. In particular, a shared watercourse system shall be used and developed by Member States with a view to attaining optimum utilisation thereof and obtaining benefits therefrom consistent with adequate protection of the watercourse system." This provision was contextualized to the SADC system.

SADC did not want to use 'reasonable and equitable utilization' language which is used in the Watercourses Convention but opted from a different language which is a bit different being that member states should attain a degree of 'optimum utilization.' As criteria to measure whether member states achieve this, Article 7 provides:

> Utilisation of a shared watercourse system in an equitable manner within the meaning of paragraphs 4 and 6 requires taking into account all relevant factors and circumstances including -
>
> (a) geographical, hydrographical, hydrological, climatically and other factors of natural character;
>
> (b) the social and economic needs of the Member States concerned;
>
> (c) the effects of the use of a shared watercourse system in one watercourse state on another watercourse state;
>
> (d) existing and potential uses of the shared watercourse system;
>
> (e) guidelines and agreed standards to be adopted.

This list is not different from the list provided for in the Watercourses Convention as also derived from the Helsinki Rules which were not covered under third chapter for they do not directly deal with. For the purposes of this chapter it is important to note at this juncture that the Protocol respects the territorial sovereignty of the involved state parties.

In recognition of this principle, the Protocol promotes co-operation; provides Member States within a shared watercourse system undertake to establish close cooperation with their neighbours in the study and execution of all projects likely. In this context member states are obliged to require any person intending to use the waters of a shared watercourse system within their respective territories for purposes other than domestic

use or who intends to discharge all types of wastes into such waters, to first obtain a permit from the relevant authority within the State concerned. The permit shall in terms of Article 8 of the Protocol be granted only after such state has determined that the intended discharge will not have a detrimental effect on the regime of the watercourse system.

As the above shows, if Angola, Botswana or Namibia wants to develop a project within its territory; it has to make sure that such developments will not affect the other riparian's welfare. Consultations are compulsory under the Protocol as they do under the Watercourses Convention if there is substantial damage anticipated. This provision can be interpreted as having been formulated to avoid conflicts among member states in the SADC region and that includes Angola, Botswana and Namibia which share the Okavango River Basin. The Okavango River being one of the world's pristine shared river basins is of great importance to the whole SADC Region including Zimbabwe which through the Nata River also contributes to the ecological and generally the environmental health of the Okavango Delta in Botswana.

In cases of emergency, and specifically, in the event that implementation or execution of any planned measures is of the utmost urgency in order to save life, or to protect public health and safety, or other equally important interests as a result of an emergency situation, the Member State planning the measures envisaged in the Protocol may

notwithstanding the provisions of paragraph 9, immediately proceed with implementation or execution. This can only be done if in such event or in the event that a formal declaration of the urgency of the measures is communicated to the other Member States. This is actually an obligation under Article 10 of the Protocol.

Further and in terms of transboundary water equity, basin states should minimize any potential damage of any kind to the other. Botswana is obviously the most vulnerable should the water flow from Angola or Namibia be reduced. This is because the Okavango Delta brings in a lot of income into the Botswana coffers through tourism in the Okavango delta and related areas. Thus Botswana happens to be the victim if there is no cooperation. Further, breach of the SADC protocol provisions and the UN Watercourses Convention provisions can mean permanent destruction to Botswana's ecological and environmental set up, thus it is imperative legally, environmentally and politically to have a cooperative arrangement between the Member States.

4.5.4 OKACOM Agreement

This agreement is worth noting at this stage of analysis, however, since it is the primary concern in terms of analysis in this research that this agreement be mentioned as an agreement which echoes principles in the UN Watercourses Convention and the SADC Protocol with the abovementioned Watercourses Convention and Protocol. In this context the analysis in Chapter 5 below is comprehensive, critical and more informative about

the protocol itself. Therefore, it is imperative to refer to Chapter 5 for any analysis of the Protocol.

This chapter actually gives more knowledge about the shortcomings in the agreement and other laws in the SADC Region. Chapter 8 thus deals with specific problems within the region and will shed light on what can be recommended as the way forward. What are important to mention now are points regarding the analytical points regarding what this chapter has highlighted.

4.4 Customary international law binding on all the countries

4.4.1Background

Having considered the local laws which bind the states under consideration at local level, it is important to now consider the development of customary international law binding on them as well. This part will now consider how international water law developed to the point where it is. This historical analysis should be understood in the context of the historical backgrounds of the three States considered above.

The analysis in this part narrows on transboundary water equity which stands at the centre of this research. Equitability will not be taken to mean only sharing but also environmental equity. Thus the concept of equitable utilisation will not be considered only in the context of sharing of water resources but also in the context of environmental protection. This is why authors on this subject have asserted:

> It is now practically beyond debate that the principle of "equitable utilisation" is the pre-eminent rule relating to the utilisation of international watercourses. According to this rule, the determination of an equitable regime for the utilisation of an international watercourse must be determined having regard to a number of relevant factors or criteria, including that of environmental protection.[366]

This part departs from a generic background to specific considerations of cases and scenarios. It then links these cases and scenarios to the principles which we now see in international water treaties and or agreements. This is an important tracing exercises because the law of international watercourses as we know it today developed from decisions of municipal courts, general interactions of nations and also through treaties. As Wouters wrote:

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[366] McIntyre, O. 'Utilisation and Environmental Protection of Shared International Freshwater Resources – The Role of Equity.' Available at: http://www.nuigalway.ie/dern/documents/53_owen_mcintyre.pdf. last accessed 24 July 2011. See also McIntyre, O. 2009. 'Utilisation and Environmental Protection of Shared International Freshwater Resources – The Role of Equity', in J. Benidickson, A. Benjamin, B. Boer and K. Morrow (eds.), *Proceedings of the Fifth IUCN Academy of Environmental Law* Colloquium, Brazil, June 2007. Cambridge University Press.

> The "water law" which developed in response to past transboundary disputes, emerged from decisions of domestic and international courts or tribunals and from international agreements. In the domestic legal system, the principle of "equitable apportionment" evolved as the primary rule that defined and balanced the competing claims of subnational actors. At the international level, the principle of "reasonable and equitable utilisation" crystallised as a rule of customary international law derived, in part, from national (inter-State) and international judicial practice, and supported by treaty law. Consistent with the doctrine of "limited territorial sovereignty", this principle arose in the context of disputes over transboundary waters and it continues to govern the legitimacy of State activities in this field.[367]

The question will now be to consider whether the inclusion of this equitable language moves inter-state relations from potential conflict to cooperation potential. This question will not be fully answered in this chapter but hints will be given which will have to be

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[367] Wouters, P. 2003. The Legal Response to International Water Scarcity and Water Conflicts: The UN Watercourses Convention and Beyond. Available at http://discovery.dundee.ac.uk/bitstream/handle/10588/595/The%20Legal%20Response%20to%20International%20Water%20Conflicts_Post%20Print.pdf?sequence=1. Last accessed 20 July 2011, p.3. References removed.

read together with other analyses in other chapters and final conclusions will be interwoven in the final chapter.

4.4.2 Early stages of development

The definition of equity in international law has been considered above[368] and will not be repeated here save where necessary. It suffices for the purposes of this chapter to begin by stating that the concept of equitability in water resources is not an issue of the modern world. As has been shown above, traditional communities through their institutional arrangements had ways of ensuring equitability of water resources. This aspect will be considered again in more detail in Chapter 6 and 7 below and Annexure B addresses some of the existing problems.

At this stage it suffices to mention that even though rivers such as the Okavango are international in character the traditional communities along it have a lot to play in so far as equitable water utilization is concerned. Further this illustrates that the concept of equitable utilization is not new and it has been followed or applied by many communities around the globe with positive outcomes or results.

It is important at this stage to highlight how customary international water law developed right from ancient times. In this context one should understand that in ancient recorded

[368] See Chapter 3.

times competition and conflicts over water resources necessitated nations or local kingdoms to create rules of engagement and institutions to oversee water utilisation. According to Wittfogel,[369] the bureaucratic structures needed for extensive irrigation works in Asia led to the formation of certain forms of government.

According to Teclaff, these ancient societies flourished not only in the Old World river basins of the Nile, Tigris–Euphrates, Indus, Yellow, and Yangtze, but also in the New World regions of Mexico and coastal Peru.[370] But even before the rise of these civilizations, evidence of early canals and dikes suggests that small communities in places such as predynastic Egypt and Mesopotamia had found it necessary to cooperate in order to control and utilize effectively the waters of major rivers.[371] Breakdowns in these cooperative relationships resulted in conflicts, with the victor sometimes absorbing the vanquished, leading eventually to the formation of empires.

The utilisation of water resources was thus mainly determined by the rules of engagement set down by the victor or the dominant kingdom, an aspect which is still reflected in some

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[369] Wittfogel, KA. 1957. *Oriental Despotism: A Comparative Study of Total Power*. New Haven. Yale University Press, p.123.

[370] Teclaff, L. 1967. *The River Basin in History and Law*. The Hague: Martinus Nijhoff.

[371] Teclaff, L. 1985. *Water Law in Historical Perspective*. Buffalo, New York: William S. Hein, p.89.

water relations in the modern world shown in Chapter 6 below. What is important to note however is that this interaction between and among these kingdoms necessitated the conclusion of water agreements to ease conflict or end it completely. Some of them were about water boundaries and water allocation. It is seldom recorded that these agreements were about environmental protection. Examples of these agreements are mentioned in this Chapter.[372]

4.4.3 Medieval to Modern developments

The "water war" rhetoric, which is mainly based on Thomas Malthus' theory, has dominated most discussions on water conflicts or cooperation dynamics in the field of international water law. In modern times, the neo-Malthusian theory influenced most developments in international water law. The threat of water scarcity and the 'water wars' rhetoric has been followed by pushers of reforms of water law at international level and the concept of equitable utilisation has been central thereto. The fact that nations had to avoid scarcity and at the same time avoid conflict and foster cooperation meant that states

[372] The earliest known was concluded in approximately 3100 B.C. following hostilities between the Mesopotamian city states of Umma, the upper riparian, and Lagash (known today as Telloh), the lower riparian. See Nussbaum, A. 1954. *A Concise History of the Law of Nations*, revised edition. New York: Macmillan. Teclaff, L. 1967, s*upra*.

had to device ways of reacting to each other's actions whenever an activity which affected the flow of international watercourse was concerned. This interaction gave rise to the law of international watercourses.

In 1648, The Peace Treaty of Westphalia, consisting of the Treaties of Munster and Westphalia, marked a significant early development of international law. It gave rise to the modern nation-state. It also laid down some basic rules of engagement of nations at international level thus paving a foundation for the law of international borders, law of diplomacy and of course law of international watercourses as we note that it gave Dutch Republic independence from Spain and consequent to negotiations the lower Rhine to free navigation by both nations. [373] Further, regarding the Rhine River, after the defeat of Napoleon Bonaparte, the Congress of Vienna of 1815 was held and the Congress's Final Act was signed and established freedom of navigation for commercial purposes on the Rhine and other rivers of Western Europe.[374]

[373] Wescoat, 1996, *supra*, note 110.

[374] Dinar, A., Dinar, S. McCaffrey, S and McKinney, D. 2007. *Bridges over Water: Understanding Transboundary Water Conflict, Negotiation and Cooperation*. Singapore: World Scientific Publishing Company, p.61.

The "innovative feature of both the Congress of Vienna and the 1856 treaty was the establishment of river commissions charged with administering the rivers concerned."[375] This was further reflected in the Treaty of Versailles in 1919 which underscored the importance of non-navigational uses, such as irrigation and fishing.

With all these developments in Europe and beyond legal principles regarding transboundary water utilization became more defined and well included into water agreements and conventions. These principles emphasised the notion that states do not have a carte blanche in the use of water resources which straddle along two or more states. This principle in fact originates from the Roman times as Dinar and others write:

> The idea that there are legal restrictions on a state's use of international watercourses, apart from those contained in treaties, has been traced to the practice of the constituent entities of the Holy Roman Empire, and is supported by the writings of commentators dating at least from the 19th century. This concept has been endorsed by learned societies since as early as 1911. In that year, the Institute of International Law (IIL), a highly respected group of experts in the field of international law, adopted the Madrid Resolution on International Regulations regarding the Use of International Watercourses.[376]

[375] Ibid. see also Wescoat, 1996, *supra*, note 110.

[376] Dinar, A, *supra*,note, 127, p.63. References excluded.

The Madrid Resolution restricted the sovereignty of states over natural resources in their territory especially if the utilisation of such resources affected the neighbouring nations. Further these efforts went on for a while and the said Institute and other reputable international organizations such as the International Law Association have continued to produce drafts on the law of international watercourses leading to the Watercourse Convention. Such important documents preceding the Watercourse Convention include the Helsinki Rules on the Uses of the Waters of International Rivers otherwise well known simply as the Helsinki Rules and later the 1994 Draft Articles on the Law of the Non-navigational Uses of International Watercourses in 1994. These will be looked at in the context of transboundary water equity briefly below after a number of cases which informed this principle have been considered.

4.4.4 Judicial decisions as precursors

Interstate conflicts over rivers informed some of the principles. Some of these disputes were solved by domestic courts, international courts and arbitral institutions. Judicial decisions of civilised nations have proven to be a very important part of the development of the modern equitable utilisation principle as embodied in international conventions today. To this end it is trite to consider a few American European and Asian cases which inform customary international watercourses legal principles which are now codified. As mentioned earlier, it is the interactions of nation-states which gave rise to customary principles and such principles have been codified. Below is an analysis of interstate

disputes as they occurred in the United States of America, Europe and Asia as well as disputes solved by the International Court of Justice (ICJ).

4.4.4.1 American cases

The concept of transboundary water equity appears in many American cases adjudicated by the Supreme Court of the United States and they are informative because they embody principles which have been incorporated into modern conventions on international water law. The Supreme Court of the United Stated has dealt with the dispute between states for a while now and has used the term ‘equitable apportionment’ more often than ‘equitable utilisation. Lathrop explains how this doctrine is applied in cases in the USA in the following words:

> Equitable apportionment cases usually arise when a downstream state seeks to prevent a diversion by an upstream state. The downstream state has to show that the diversion will cause substantial injury. Then the burden shifts to the upstream state to demonstrate that the equities weigh in its favour and a diversion should be permitted. In this capacity, the Court has “refused to impose doctrinaire water law rules, but instead has borrowed a principle of international water law called ‘equitable apportionment.’ However, the state water law doctrines of the contended states are an important consideration. For example, among prior

> appropriation states, priority becomes the "guiding principle." But, the Court has emphasized that state law is not controlling.[377]

This term "equitable apportionment/equitable utilisation" may look ambiguous but its application has been simple. The reason why its application has been simple especially in the USA is because of the fact that its justification or philosophical underpinnings are simple to understand and apply in real life. This philosophy is that interstate allocation decisions should be based on notions of fairness and practicality, rather than deriving from inflexible rules or from the potentially inappropriate precedents and arrangements found in water law at interstate level. As shall be seen below, the case of *Kansas* v *Colorado*[378] which is basically the locus *classicus* of international water law in the USA illustrates this principle more accurately and this decision has informed some of the thinking behind international law governing watercourses.

There are more than five major cases in which the Supreme Court was asked to resolve a transboundary water equity dispute where no compact or other federal legislation was in effect to establish an interstate allocation. In this research only four of these are

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[377] Lathrop, A S. 2009. A Tale of Three States: Equitable Apportionment of the Apalachicolachattahoochee-Flint River Basin. *Florida State University Law Review.* 2009 (36): 865 -902, p.865. References excluded.

[378] 185 U.S. 125 (1902)

considered in brief in the context of transboundary equity.[379] One of the eminent Jurists in world history Oliver Wendell Holmes adjudicated over an important case in so far as international water law is concerned.

As mentioned above, the case of *Kansas* v *Colorado*[380] set the stage for the application of the doctrine of equitable utilisation in America and it informed the development of this doctrine of equitable utilisation as we see it in international watercourses law today. In this case, Kansas had to bring the matter before the Supreme Court of the United States after it felt aggrieved by the actions of Colorado were violating its rights based on the principle that a State can use its resources without destroying the ecology and welfare of the riparian state.

Kansas is a downstream state whereas Colorado is an upper riparian state. Colorado wanted to make some developments to the river but such developments according to Kansas could cause substantial harm to itself thus a conflict arose which had to be

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[379] *Kansas v. Colorado* 185 U.S. 125 (1902) and 206 U.S. 46 (1907), *Wyoming v. Colorado* 259 U.S. 419 (*1922*); *New Jersey v New York* 283 U.S. 336 (1931) and 347 U.S. 995 (1954); *Connecticut v Massachusetts* 282 U.S. 660 (1931); *Washington v. Oregon* 297 U.S. 517 (1936); *Nebraska v. Wyoming* 325 U.S. 589 (1945) and 515 U.S. 1 (1995); , and, *Colorado v. New Mexico* 459 U. S. 176 (1975)

[380] 185 U.S. 125 (1902)

adjudicated by the Federal Highest Court. Colorado depended on the principle ‘use your own without destroying another’s legal right’, this is basically an argument based on the Harmon doctrine which will be elucidated in more detail below. Colorado on the other side contested, saying that the fact that the river originates and flows in its territory, it has full authority to use its water without caring about the effects outside its border.

Colorado further argued that because the river originates and flows in its territory, it has full authority to use its water without caring about the effects outside its border.[381] The Supreme Court rejected both arguments of the States and applied customary international law. After a systematic consideration of international legal principles, the court decided that in applying the doctrine of equitable apportionment a court must consider the effect of what has been done upon the conditions in the respective states, and so adjust the dispute upon the basis of equality of rights as to secure as far as possible to Colorado the benefits of irrigation without depriving Kansas of the like beneficial effects of a flowing stream and stated:

> Equality of right and equity between two states forbids any interference with the present withdrawal of water in Colorado for the purpose of irrigation.”[382]

[381] 185 U.S. 125 (1902), p.146.

[382] 206 U.S. 46 (1907), pp.113-118.

According to the court, there was need for a balancing analysis in order for justice to be achieved between the states. This balancing exercise was done through the application of the doctrine of equitable apportionment. In applying this doctrine, the court thus rejected the claims of the states which were based on the Harmon doctrine which supports absolute sovereignty over a river by an upper riparian state. The court went on to establish the 'substantial harm' requirement as we know it today when it stated that Kansas could institute new proceedings "whenever it shall appear that, through a material increase in the depletion of the waters of the Arkansas [River] by Colorado . . . the substantial interests of Kansas are being injured to the extent of destroying the equitable apportionment of benefits between the two States resulting from the flow of the river."[383]

The case of *New Jersey v New York*[384] is one of the trademarks in international watercourses law. In this case, the states were firmly asserting their rights under riparianism. New York embarked on a plan to divert a large amount of water from the Delaware River to supply New York City. New Jersey opposed the proposal to divert. The Special Master ruled that the diversion violated the principle of equitable apportionment but it was necessary thus it was allowed but subject to some conditions.

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[383] at 117-18.

[384] 283 U.S. 336 (1931)

The Supreme Court confirmed the Master's holding and Justice Holmes, delivering the majority judgment said that "both states have real and substantial interests and rights over the waters of a river that must be reconciled as best they can. The best way of achieving it is to secure equitable apportionment without quibbling over formulas,"[385] and continued:

> A river is more than an amenity; it is a treasure. It offers a necessity of life that must be rationed among those who have power over it. New York has the physical power to cut off all the water within its jurisdiction. But clearly the exercise of such a power to the destruction of the interest of lower States could not be tolerated. And on the other hand equally little could New Jersey be permitted to require New York to give up its power altogether in order that the River might come down to it undiminished. Both States have real and substantial interests in the River that must be reconciled as best they may. The different traditions and practices in different parts of the country may lead to varying results, but the effort always is to secure an equitable apportionment without quibbling over formulas. [386]

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[385] *Supra* note 2, p. 326; also see 283 U. S. 336 (1931), pp. 1104-1109.

[386] 283 U. S. 336 (1931), p. 343.

This case shows that there is always need to balance the interests of the states whenever the court is to apply the doctrine of equitable utilisation/apportionment. Therefore, although New York was given the chance to divert the waters, a burden was put on it to ensure that such diversion will not cause substantial damage to the other riparian state. Therefore, the court had to reconcile the interests of the concerned states thus giving effect to the equitable apportionment doctrine.

Later, quoting from previous cases, the Supreme Court held in *Connecticut v Massachusetts*,[387] that the disputes between states over diversion of water from streams flowing through both territories must be settled on the basis of equality of right. According to the Supreme Court this did not mean that there must be an equal division of waters, but meant that the principles of equal right and equity shall be applied, having regard to both interests.[388] In this case, Massachusetts (the latter) was permitted by the Secretary of War at that time to divert and impound floodwater during May to June. Connecticut was of the position that this permission would harm navigation, fish stock and farm land in the river and along it.

[387] 282-283 U.S. 75 (1931),

[388] 282-283 U.S. 75 (1931), pp. 603.

4.4.4.2 The law as it developed in Europe

A number of water disputes have occurred in Europe and the concerned courts adjudicated the cases and applied the doctrine of equitable utilisation as well. The first of such cases with a clear-cut application of the doctrine is the case of *Aargau v Zurich* case[389]. What happened in this case is that a certain private corporation in Zurich constructed a dam where it could get its water for the operations at its factory.

Further downstream there were mills which were negatively affected by the damming of the river in that the water volume in the flow in the river was reduced thus it would not be able to cater for all their operations downstream. The Swiss Supreme Court stated the rule that applied in the case in the following words:

> Especially where the relations among components units of a federal State are at stake, a rule of international law derived from the law of good neighbourliness applies. According to that rule, the exercise of a right may not affect the right of a neighbour. The two tights are equal, and, in the event of a conflict, a reasonable arrangement has to be found on the basis of the relevant circumstances.[390]

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[389] 1878. Vol. 4, p.34. see also Smith, HA. 1931. *The Economic Uses of International Rivers*. London. P.K. King & Son Ltd, pp.39-43.

[390] At p.47

Therefore, the court opted to apply international legal principles which are still in place up to date. It then extracted a principle of equitable utilisation and continued:

> A right of a Canton of Aangau to uninterrupted conveyance of all the water in the Jona does not exist in every case. With regard to public waters, the cantons have no private ownership, but only sovereignty from which is not any way derived any right by which in some instances the canton situated upstream could be entirely deprived of the muse of the water or at least of a certain manner of use. Each canton is rather entitled, by virtue of its sovereignty to take the necessary measures for a rational utilisation of the public waters corresponding to its needs, but only in so far… as the joint use of water is not thereby made impossible but is left to the rest of the cantons in the same manner.

In this light, as the court further asserted, so long as the sovereign power of the state is exercised in a reasonable and beneficial manner, its exercise cannot be vetoed by the assertion of any absolute property right. Thus, the decision of the court in such a case "essentially rests upon the principle of the "equitable apportionment of benefits."[391]

[391] *Ibid.*

In Italy, in the case of *Societe Energie Electriquedu Littoral Mediterancen v Compagnia Imprese Elettriche Liguri* 1939, [392] the doctrine of equitable utilisation was also applied. The court emphasized the concept of limited sovereignty over river courses and affirmed community ownership. In the words of the court:

> "the international duty of the state not to impede or to destroy the opportunity of the other states to avail themselves of the flow of water for their own national needs".[393]

Further the court considered the principles of international law where principles of good neighbourliness are a crucial consideration in so far as reasonable land equitable utilisation is concerned. The court also alluded to the concept that riparians should not cause substantial damage to each other in the utilisation of water resources which straddle across their borders.[394]

In Germany, the German Constitutional Court also had to apply the principles of equitable apportionment in the case of *Wurttemberg and Prussia v the Baden*.[395] This case

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[392] *Ibid*. pp. 253-254; also see the text in *Digest of Public International Law Cases,* (1938-1940) p. 120.

[393] *Ibid*. pp. 253-254 & 120.

[394] Dinar, A, *supra* note 127, p.35.

[395] (The Donauversinkung Case), German Staatsgerichtshof, June 18, 1927. pp. 217-221.

concerned activities which increased seepage on the River Danube. The River runs along the two German states at that time and at some point it disappears into some porous rock and reappears on the surface downstream. Wurttemberg and Prussia brought action against Baden alleging that the state of Baden had undertaken activities which made seepage in the Danube to be acerbated and dry up at a time when the two states needed water supply. Baden responded by claiming that Wurttemberg had taken actions that unnaturally reduced the seepage loss.

The court noted that:

> . . . loses during certain periods of the year a considerable part of its water in consequence of the water sinking under the bed of the river and flowing to the lower levels of the Lake of Constance and of the Rhine. The reason for this loss of water . . . is the geological composition of the banks and of the bed of the river. They are composed of chalk through the cracks and pores of which the water of the Danube in this section flows south in subterranean passages in order to emerge eventually as the source of the river Aach in Baden.

The court found it imperative to apply the principles of international law because state laws did not apply under the constitution at that time. The court found that "[t]he members of the [German] Federation have, subject to considerable limitations, preserved their position as independent states. ... [I]n matters subject to State legislation they may, subject to the confirmation of the Reich, conclude treaties with foreign powers. In so far,

therefore, as these States act as independent communities, that is, in matters reserved for their exclusive competence, their relations are governed by international law..."[396]

In the end the court held that

> Baden must refrain from causing such increase in the natural sinking of the waters of the Danube as is due (a) to the artificially erected . . . works . . . and (b) to the accumulation of sand and gravel in the bed of the Danube . . ., but that it is not bound to undertake the responsibility for the permanent improvement of the bed of the river.[397]

Further, Wiirttemberg was required to refrain from causing such decrease in the natural sinking of Danube waters as was due to certain works and artificial damming of avenues of sinking.[398]

The court held further that even if the states were not sovereign or independent states, international legal principles such as the obligation not to cause harm to the riparian state

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[396] McNair A and H. Lauterpacht, eds. 1931. *Annual Digest of Public International Law Cases, 1927 and 1928,* p130. London, Longmans. p.130. Today the two States of Baden and Wiirttemberg are combined, forming the Land of Baden- Wtirttemberg.

[397] Ibid pp.128-129

[398] Ibid

and the doctrine of equitable apportionment did apply. With the application of these principles, the court decided that both Baden and Wurttemberg should eschew utilising the water resources of the Danube in a way that harmed the other state. In summation the judgement in this case indicates that, the interest of each state must be weighed in an equitable manner against the interest of others hence both states in this case were to take specified actions aimed at restoring the flow and seepage under natural conditions.

4.4.4.3 International arbitral awards

A number of decisions have been made as well at international level where states have conflicted over the utilisation of water resources in rivers that straddle across them or across their borders. The cases range from diversion of water, pollution and dam construction. International arbitral tribunals or Committees have resolved these disputes through the application of the doctrine of reasonable use and equitable utilisation. It is thus imperative to consider the development of this principle through the cases below.

4.4.4.3.1 France v Spain: the Lake Lanoux Case (1957)

Waters from Lake Lanoux flow at the end of the lake into the Carol River which further flows into Spain. In September 1950, Electricité de France, with the intention of generating hydro-electric power, applied to the Government of France to divert the waters of Lake Lanoux towards the River Ariège. The same quantum of diverted water was to be recharged or redirected into the Carol River through the Puigcerda Canal. Although

the Government of France approved the project, it saw itself as only bound to return the waters which are necessary for use by the Spanish people. Spain objected to this proposed diversion citing that the diversion would harm the interests of Spain and would be against the Treaty of Bayonne of May 26, 1866, which was signed between France and Spain and the Additional Act of the same date.

In this case known as *France v Spain: the Lake Lanoux Case,* [399] the arbitral tribunal rejected the Spanish argument. It relied on the French argument that the water would be redirected to the River Carol, hence there was no net reduction in the flow of water in that river. Be that as it may, the Tribunal also noted that the principles of international law regarding reasonable use and equitable utilisation were applicable to the case. In elucidating this principle in a widely quoted dictum, the tribunal said:

> …the tribunal expressed its view that under existing customary international law co-riparian states are equally entitled to reasonable use of the waters from an international drainage basin and its view regarding a co-riparian consent;
>
> > …that there exists a principle prohibiting the upstream state from changing the waters of a river in their natural condition to the serious injury of a downstream state. Such principle cannot be applied to the present case because the tribunal has established, in

[399] 24 International Law Reports 101 (1957)

> regard to the first question examined above, that the French project does not alter the waters of Carol.[400]

It is important to note that this judgment shows that the tribunal said that there was no principle of customary international law which obliged an upper riparian state to consult downstream riparian states regarding developments envisaged on a river which straddles into another state. This implies that the downstream riparian does not have the power to stop or veto the projects of the upper riparian unless one condition exists: that the project has negative or adverse effects on the lower riparian. When such a condition exists, the upper riparian has the obligation to consult the lower riparian on the proposed project. This case, thus, is a strong background to some principles which obtain in international conventions and international agreements as shall be shown below.

4.4.4.3.2 Canada v USA: The Gut Dam Case (1968)

This case reinforced the obligation of one state to use its resources without causing harm to the other. What happened in this case is that in 1904 Canada, with the consent of the United States, constructed a dam between Adams Island in Canadian territory and Les Gallops Island of US territory in St. Lawrence River. A condition was agreed that this

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[400] Bernhard R. (ed), 1981. *Encyclopaedia of Public International Law: Decision of International Courts and Tribunal and International Arbitration*, the Hague: North-Holland Company, pp.166-167.p. 167.

project should not cause any harm to the USA and its citizens. Accordingly, Canada agreed to maintain the water levels of Lake Ontario and the St. Lawrence River. In the case of damage Canada agreed further that it would pay compensation.[401]

Between 1951 and 1952 the river flooded and caused extensive damage to US properties and severely eroded its lands prompting a dispute regarding liability and compensation. The Lake Ontario Claim Tribunal was created in 1965 just to hear and resolve this dispute. The Tribunal ruled that Canada was responsible and liable to pay compensation to the USA for the damage caused. The Parties negotiated and arrived at a conclusion that Canada should pay US 350 000 as full and final compensation.

However, Canada contended that it was only bound to compensate those residents of the Galops Island and that that obligation ended in 1908. The Tribunal, however, held that the 1903 agreement obliged Canada to pay compensation and such obligation existed as long as the agreement was in place. Further, Canada could not escape liability because in 1952 after the flood, Canada had sent a diplomatic note on the issue acknowledging liability for the damage that was caused by the floods.

[401] Cairo A. R. Robb, Bethlehem, DL. Crawford, J Sands, P. *International Environmental Law Reports, Volume 1*., Cambridge University Press, p.390

This case illustrates that the obligation to use one's land without causing harm to the other remains a firm principle of international watercourse law. Further, where a state has erected some artificial structures along an international watercourse, it is obliged to undertake further steps to ensure that the other riparians are not adversely affected by such developments on the river channel. As the principle of the law of equity says, liability follows the wrongdoer, thus Canada had to pay.[402]

4.4.4.4 Decisions of the Permanent Court of International Justice and the International Court of Justice

There are two major cases to be considered at this juncture. These are the case between Belgium and the Netherlands concerning the diversion of the water from the Meuse River which was heard by the Permanent Court of International Justice (PCIJ) in 1937 and the case between Hungary and Slovakia – the so called Gabcikovo-Nagymaros Case, heard by the International Court of Justice in 1998. These are landmark cases which most writers on the law of international watercourses law always cite.

4.4.4.4.1 Belgium v. the Netherlands (1937)

[402] Ibid.

This case concerned the diversion of the water from the Meuse River.[403] This river originates from the northern parts of France, it straddles across the border into Belgium and then into Netherlands before it flows into the Northern Sea. Two sections of the river form the boundary between Belgium and the Netherlands. In the 1850s various disputes arose between these states regarding the distribution of the waters of the Meuse River. It was not until 1863 that the two countries were able to settle the issue of water diversions by concluding a Treaty, which established the regime for taking water from the Meuse.[404]

These disputes emanated from projects by Belgium where it constructed new canals which took water from the Zuid-Willemsvaart canal which was fed by the Meuse River. Since the Zuid-Willemsvaart canal was fed by the Meuse River, the new canals were now causing more water to be diverted into Belgium to feed Belgian operations.

The two states negotiated and in 1925, they agreed to conclude a new treaty covering all the projects they wanted to undertake. Pursuant to this agreement both the states started

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[403] Thirteenth Annual Reports of the Permanent Court of International Court of Justice, Series E. No 13, (1937) pp. 135-141.

[404] Belgium-Netherlands, Treaty Regulating the Diversion of Water from the Meuse, The Hague, 12 May 1863, hereafter the Treaty.

enlarging their projects and more water was diverted into the new canals. [405] However, both were not happy about the canal projects being undertaken by the other. Netherlands contended that the Belgian projects affected the Netherlands adversely in three ways, firstly, that excessive current in the Zuid-Willemsvaart canal made navigation difficult.

Secondly, more canals dug by Belgium took more water, thus the water level in the Meuse River was reduced making navigation difficult and, thirdly, the irrigation projects in the Campine district of Belgium caused some flooding in some southern parts of the Netherlands. As a result, the Netherlands submitted a case to the court requesting it to declare such works illegal and against the provisions of the 1863 treaty.

The court applied 'general principles of international law as recognized by civilized nations'.[406] In this light, it emphasized that principles of equity do not have to be ignored because the two states were supposed to utilize the water resources equitably and treat each other as equal partners in the process. [407] It further emphasized that a sharp division between law and equity, such as prevails in the administration of justice in some States, should find no place in international jurisprudence; even in some national legal systems,

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[405] see 1937 Thirteenth Annual Reports of the Permanent Court of International Court of Justice, Series E. No 13 supra.

[406] Article 38 of the Rome Statute

[407] PCIJ Decision on *Meuse Diversion Case*, (1937), pp. 187-88.

there has been a strong tendency towards the fusion of law and equity. Some international tribunals are expressly directed by the submissions of the concerned states which control them to apply "law and equity."[408]

On this note the court went on to interpret the Treaty of 1863 and held that the two states were entitled to expand their projects as they did but they were precluded from doing so if the project was detrimental to the other state. This reinforces the principle that a state is allowed to do what it wants on its territory as long as such activities do not harm the other states. This is "treaty interpretation which is in accordance with the national principle of self-containedness."[409]

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[408] Ibid at paragraph 321 referring to the Cayuga Indians Case, Nielsen's Report of the United States– British Claims Arbitration (1926), p. 307. Of such a provision, a special tribunal of the Permanent Court of Arbitration said in 1922 that "the majority of international lawyers seem to agree that these words are to be understood to mean general principles of justice as distinguished from any particular systems of jurisprudence". See further, the Proceedings of the United States–Norwegian Tribunal (1922), p. 141.

[409] Spiermann, O. 2005, 'International Legal Argument in the Permanent Court of International Justice, the Rise of the International Judiciary.' *Cambridge Studies In International and Comparative Law.* Cambridge University Press, p.374.

4.4.4.4.2 Hungary v Slovakia: Gabcikovo-Nagymaros Case

This dispute dates from the times when Czechoslovakia was still a unitary and sovereign state which bordered Hungary. In 1977 Czechoslovakia and Hungary concluded an agreement whereby they agreed on the construction of a dam on the Danube River. The preamble to the agreement said that this project was meant to achieve a broad utilisation of the river resources of the Bratislava-Budapest section of the Danube River in the context of the development of water resources, energy, transport, agriculture and other sectors of the national economy of the contracting parties.[410] Further, there was a plan to come up with a hydroelectric power generation plant. This project was, however, heavily criticised in environmental circles at the time and the Government of Hungary was forced to abandon the plan completely.

After the disintegration of Czechoslovakia, Slovakia which became the successor state to the project decided to proceed with the plan to build the dam. Because Hungary had decided to stop the reconstruction it disagreed with the plan of Slovakia to rebuild the dam. A dispute arose but it was not resolved. The two nations agreed though the facilitation of the European Union (EU) to submit the matter to the ICJ for resolution.[411]

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[410] Preamble of the Treaty Concerning the Gabcikovo-Nagymaros Project 1977 at 1109 *UNTS*, p. 211.

[411] *Hungary v Slovakia*: Gabcikovo-Nagymaros Case ICJ. paragraph 15-25 of the 37 ILM (1998), pp. 162-202.

The ICJ considered a number of issues and reached the conclusion that Hungary was not entitled to cancel the project.[412] The court further emphasised the need for cooperation when dealing with projects in internationally shared watercourses especially when such watercourses formed boundaries between or among the concerned states. Cooperation thus entailed that the state which needs to undertake a project in an internationally shared watercourse has to take steps to ensure that the other riparian is not negatively affected by the activities it is undertaking. The World Court stated that although Hungary violated the *1977 Treaty* provisions "that cannot mean that Hungary forfeited its basic right to an equitable and reasonable sharing of the resources of an international watercourse."[413]

The court went on to elucidate the obligation not to cause harm and made reference to the principle in the *Belgium v. the Netherlands* case dealt with above. In the words of Judge Koroma in his separate judgment:

> While it is acknowledged that the waters of rivers must not be used in such a way as to cause injury to other States and in the absence of any settled rules an equitable solution must be sought (case of the Diversion of Water from the Meuse, Judgment 1937, PCIJ Series A/B No 70), this rule applies where a treaty is absent.

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[412] *Ibid*, p.187 and pp. 191-197

[413] Ibid, p.190

This case is a very important one in the development of international watercourses law. It is important more specifically in the sense that it combined principles of water management and sustainable development. This combination made the court to consider the importance of the Environmental Impact Assessments in large scale projects which might negatively affect the other riparians in an international watercourse and equity runs as a bridge between competing interests of states sharing a river course. Because both states violated the 1977 Treaty, they were ordered to pay compensation to each other and to enter into negotiations in good faith and to utilize the waters in a reasonable and equitable manner. [414]

From the above cases it is clear that under international watercourses law, the principles of 'no harm' and 'equitable utilisation' are firmly inbuilt. These principles are underlined by the need for cooperative relations and good neighbourliness under international law and international relations. These principles as we shall see are now well placed in treaties which bind various countries across the globe. Upreti summarizes international principles in the following words:

> The states in an IWC are required to consult, negotiate and co-operate with each other and work in a co-ordinated manner by addressing each other's interest and maximising the benefits. Furthermore, the *Gavcikovo-*

[414] *Ibid*. pp. 198- 202.

> *Nagymaraos* judgement provides insight into the significance of such co-operation. There have been varying state practices in this area. In the Nile basin, for example, both treaties of 1929 and 1959 safeguarded the prior or historical or vested right of Egypt over the Nile's water, which in essence advocated the 'no harm rule', against the concept of equitable utilisation. In other treaty regimes, like the treaty between Canada and USA, Mexico and USA, and several others have maintained the cardinal rule of IWC as 'equitable utilisation'. However, from the evaluation of each practice envisaged in those treaties, the majority of such regimes have emphasised the concept of reasonable and equitable utilisation, no harm to the other state and duty to cooperate and negotiate.[415]

In this light, therefore, one can conclude that the law of international watercourses developed from the practice of states and from the rulings of domestic courts. Now these principles are seen in international instruments. The question still remains whether the inclusion of this equitable language means that states will cooperate better or not. It seems from the cases above that the inclusion of equitable language does not correlate with cooperation. In other words, the existence of an agreement regulating how states should utilize an international watercourse does not mean that states will cooperate. The disputes

[415] Upreti, T. 2006. *International Watercourses Law and its Application in South Asia,* Katmandu: Pairavi Publication, p.53.

above show that states will always conflict with each other irrespective of the existence of the Agreements or Treaties. The examination of the conventions and other agreements below will shade more light on this aspect of this research with more concentration on Angola, Botswana and Namibia.

4.6 Implications on Transboundary Water Equity

As echoed in the literature review above, the concept of transboundary water equity very much depends on the local legal and institutional arrangements among or between the countries sharing a river course. More so, the concept is affected by the goodwill of the countries to enforce the principles of international law in the context of their municipal laws. In the *Case Concerning the Continental Shelf (Tunisia/Libyan Arab Jamahiriya,* it was confirmed by the ICJ that:

> [E]quity as a legal concept is a direct emanation of the idea of justice. The Court whose task is by definition to administer justice is bound to apply it.[416]

Various international tribunals and international courts have elaborated on the concept of international water equity as elucidated above. In addition to the above and as a background, to the points below, some authors have dealt with this concept as well and

[416] See *Continental Shelf Case (Tunisia v. Libyan Arab Jamahiriya),* I.C.J. Reports 1982, pp. 18, 60. *Burkina Faso v. Republic of Mali Case*, I.C.J. Reports 1986, pp. 554, 633.

have highlighted how the behaviour of states and their interactions in regards to an international watercourse can affect transboundary water equity among or between the concerned states.

4.6.1 State behaviour, local laws and transboundary water equity

So far, this chapter has looked at the law as it developed at national and international levels. It considered the local laws and international laws. At national level, it started with the Constitution then moved on to local statutes relevant to water law. At international level, it considered the relevant historical events leading to the development of written laws and the development of customary international water law through decisions of international and local courts.

The development of international water law has implications on how the concept of transboundary water equity is applicable and being applied to the Okavango River Basin. The OKACOM Agreement which is the cardinal agreement in the Okavango River Basin makes specific and many references to 'equity' just like many international agreements. However, this reference is not necessarily translated into practice. In this light, it can create a good impression about how the nations involved in the implementation of this concept are doing it for the sake of expediency or convenience. This is why some authors have said that equity is now one of the most frequently applied concepts in transboundary

agreements, particularly as related to water allocation but also that the language of equity provides no practical guidelines for water allocation.[417]

> The words 'law and equity' … cannot be understood here in the traditional sense in which these words are used in Anglo-Saxon jurisprudence. The majority of international lawyers seem to agree that these words are to be understood to mean general principles of justice as distinguished from any particular system of jurisprudence or the municipal law of any state.[418]

The meaning of the concept of equity might be well known and drafted into almost all international watercourse agreements but the problem comes with what obtains on the ground. Whereas international law and other watercourse agreements provide for collaborative or cooperative mechanisms, the reality catches up with the concerned states when the provisions of the agreement are not put into practice or when the specific water laws of the concerned states are not harmonized with the relevant watercourse agreement.

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[417] See for instance, Beaumont, P. 2000. 'The 1997 UN Convention on the Law of Non-navigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines.' *Water Resources Development.* 2000 16(4) 475-495.

[418] *United States Norway Arbitration Award* (1922) 1 Reports of International Arbitral Awards 307.

The OKACOM Agreement binds only the three concerned states and no other country outside the agreement can come and enforce the Agreement for these countries. Therefore, it is rather an intricate situation where one state is less cooperative than the other leading to lack of unison in the implementation of the Agreement. Further, a cooperative arrangement may be difficult to achieve where one of the concerned states is not bound by some important international convention such as in the case of the Ramsar Convention which does not bind Angola yet it contributes to more than 90% of the water that runs into the Okavango delta downstream into Botswana. These are some of the shortcomings in the Okavango River Basin which have specific and negative implications on transboundary water equity in the Basin as will be shown in more detail in the last Chapter below.

4.6.2 Shortcomings of international watercourses law

The findings from the discussion above show that international watercourses law developed as an endogenous system of individual state interests and it continues to grow as such at basin level such as the Okavango River Basin. More complexly, these state interests are not consistent the world over and the Okavango River Basin is no exception: Botswana has not harmonized its laws with international norms, Angola has done so partially or to a better extent than Botswana and Namibia has gone the furthest to harmonise its own laws with international watercourses laws. This means that there is a difference in the way these states give priority or importance to the doctrine of transboundary water equity. This is further amplified by the point that not all states

involved in the management of the Okavango River Basin are signatories to some of the most important conventions affecting the management of the Basin.

Therefore, the ‘traction points’ in so far as transboundary water equity is concerned are different in the three states. This has obvious negative implications on transboundary water equity in the Basin since one state may be more or less or not even bound to do something than the other under international watercourses law. Looking at the legal provisions in the OKACOM Agreement, one can say that it is too weak to compel the three countries to do “something” at basin level just as international law is dependent on the goodwill of states.

International law may help in directing the functions of the OKACOM Commission to the direction of cooperation. However, its ability to achieve the necessary conditions for transboundary water equity are very much restricted. The OKACOM Agreement as shall be shown in the next chapter below, is also very much limited in its ability to foster cooperation. Although one may argue that where there is a transboundary water agreement there is a high propensity towards cooperation, the agreement itself can be a source of conflict.

Therefore, there is no guarantee of cooperation where there is a transboundary water agreement. This has already been shown above where cases have been a source of conflict especially in cases of determining the respective rights and obligations of the concerned

state. As a system of state practice, international law has become a system of ‘high school popularity contest’ where the strong can impose their will on the weaker, thus the weaker are forced to follow the cultures of the strong in the same way as the ‘state practice’ of the strong, resourceful powerful is being imposed on the weaker and less popular though resource rich but suppressed in many ways.

It is noteworthy that international law, being a system which lacks an overarching universally binding tribunal, has been reduced to a merely international agreement system. This makes imperative principles difficult if not impossible in most instances to implement. The UN system is not a strong system with strong institutions which put states to task in so far as their obligations are concerned. At regional level organizations such as OKACOM are also such weak regional agreement based systems without a strong institution to drive the concept of transboundary water equity borrowed from international law. This meant that, the provisions of the OKACOM Agreement cannot be enforced against the three concerned state parties to it. In Chapter 8 these institutional weaknesses are addressed in more detail and recommendations made to that effect.

5. Summary

This Chapter has shown that strict adherence to the principle of state sovereignty leads to less collaboration and conversely, emphasis of state responsibility and good neighbourliness promotes cooperation and collaboration, hence positive implications on transboundary water equity. Therefore, as a reflection of the conclusions and

recommendations in Chapter 8 below, for Angola, Botswana and Namibia to successfully cooperate as opposed to conflicting about transboundary water equity and its various aspects in the Okavango River Basin, they should minimise emphasis on state sovereignty. This spirit to minimise this conflict is already reflected in the OKACOM Agreement which is analysed in more detail below.

It has been shown above that Namibia and Angola are the two states with laws which embody international water law principles with some provisions to the effect that the countries through their own laws vowed to cooperate in so far as transboundary water equity is concerned. Namibia's legislation is even more explicit on that. Botswana however does not have specific provisions in its municipal legislation which enjoin it to cooperate in the management of transboundary water management. Botswana however is bound by a number of international instruments to cooperate. Therefore, there is great need for harmonization of municipal laws with international norms, otherwise potential for conflicts exists in so far as transboundary water equity in the Okavango River Basin is concerned.

Further, this chapter has indicated that the concept of transboundary water equity is elusively provided for in most international water sharing agreements and it also happened in the OKACOM Agreement. The fact that there is mere inclusion of this term in an agreement does not necessarily mean that the agreement in which the term exists is an 'equitable agreement' and further the inclusion does not entail that there will be

mutuality in the allocation of waters in the respective basin. On the corollary, an equitable agreement does not necessarily have to incorporate equitable language in it. On an irrefutable and conclusive note, the fact that an agreement incorporates the terms such as ‘equitable’ does not mean that there was, is or will be equitable allocation of water resources in the concerned Basin.

The above is further elaborated by the point stressed in this chapter that the three countries sharing the Okavango River Basin have different local inclinations in their laws to implement this concept and they have not subscribed to international laws at the same degree in this context – some have not ratified the most important international instruments – which of course includes those ‘high school contest attitudes’ typical of international legal principles.

It is generally accepted that some practices which have now been paraphrased in general terms in transboundary agreements as terms including ‘integrated water management’, ‘hydrological unity’, ‘ecosystem approach’, are elusive terms without any specific meaning. In other words, their meanings in legal terms depend on the implementation of the ‘thinking’ of the states which are members to a transboundary agreement. Therefore, what is equitable in Asia or America is not necessarily equitable in Africa or in the OKACOM context. Further, what is listed as points to consider in the Watercourses Convention as derived from the Helsinki Rules is not necessarily what is applicable in the African hence OKACOM context. In this regard equity is an elusive or at best a

contextual concept. In this light further arguments are reflected and advanced in Chapter 8.

Chapter 5

Comparative Water Law: Analysis of Transboundary Water Equity Discourses in Southern Africa

5.1 Introduction

This chapter provides comparative analyses of three significant river basins in Southern Africa. Specifically, it looks at the Zambezi River Basin, the Orange-Sengu River Basin and the Incomati River Basin. This choice was made carefully and strategically. These rivers do not only form part of Southern Africa's most hydro politically sensitive and most shared Rivers, but also represent a significant element of the aspects needed in answering research questions stated above especially regarding conflict and cooperation. Geographically, they also cover a significant number of countries with different cultures, climates and geopolitical locations.

It was anticipated that a comparative analysis of conflict and/or cooperation in the management of these rivers would lead to an informed worldview of how river basins are managed across the world and what the general trend is: whether there is movement from potential conflict to cooperation potential or it is *vise versa*. In addition the institutional arrangements are analysed with special focus on their politics or role in fostering cooperation or conflict. This will be used to reflect again on what is transpiring in the

Okavango River Basin. This leads into Chapter 6 which contains lessons and recommendations regarding transboundary water equity in the Okavango River Basin.

5.2 Understanding the Regime Theory in the context of international water law

Before delving into the details of various case studies, it is important, as a background, to understand the regime theory since this chapter helps in answering the last research question and helps also in generating answers to the other questions. The regime theory was made popular by Richard Krasner around the 1980s when he asserted that regimes consists of "implicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations." [419] Breaking down this definition, he goes on to say that principles are beliefs of fact, causation and rectitude. Norms are standards of behaviour defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choices. [420]

As Chapter 3 and 4 highlighted above, the regime theory has been used to explain inter-state cooperation. Regime theory has informed the analysis of international arrangements

[419] Krasner, S. 1983. 'Structural Causes and Regime Consequences: Regimes as intervening variables', in Krasner (Ed). 1983. *International Regimes*, Ithaca, NY: Cornell University Press, pp. 1-21, p1.

[420] Ibid.

on the Jordan River, the Tigris and Euphrates Rivers, the Orange River and the Mekong River, amongst others.[421] Regime theory has, however, more recently given way to environmental governance while cognitivism found its follow up in constructivist approaches – (re)framing, social learning and (de)securitisation.[422] The emphasis of much of the regime literature has relied primarily on an assumption either that the actors involved in transboundary water management may regard themselves as equal or that assumption can translate to actual practice. Further, power asymmetry can bring cooperation needed for sustainable transboundary water management. This is a good clue on how to analyse the interactions among the countries involved in Okavango Rover Basin management.

In light of the above, it is discernible that regimes mainly concern themselves with normative institution where there is a specific issue such as water resources management in the Okavango River Basin and such resources which states are dealing with foster

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[421] Keohane, R.O. and J.S. Nye. 1977. *Power and Interdependence: World Politics in Transition.* Boston: Little, Brown and Company. See the sources in Chapter 3 above

[422] Checkel, J T. 1999. *International Institutions and Socialization*. Arena Working Paper WP99/5. Oslo, University of Oslo., Wendt, A. 1999 *Social Theory of International Politics*. Cambridge: Cambridge University Press. Buzan, B. and O. Waever, 2003. *Regions and Powers: The Structure of International Security.* Cambridge, New York: Cambridge University Press.

cooperation among them. In this context it has dealt mainly with the question regarding why cooperation is possible in some cases whereas in other cases there has been conflict. Most of the literature on international environmental cooperation is deficient of the contributions from regime theory and does not consider how it could benefit from a better understanding of its findings.[423]

It will be understood as we go through the case studies below that regimes facilitate agreements by raising the anticipated costs of violating others' property rights, by altering transaction costs through the clustering of issues, and by providing reliable information to members.[424] Therefore, there is the concept of "cooperation under anarchy"[425] where

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[423] Neumayer, E. 2001. 'How Regime Theory and the Economic Theory of International Environmental Cooperation Can Learn from Each Other.' *Global Environmental Politics,* 2001 1(1):122-147. See also Oye, KA. (Ed). 1985. *Cooperation Under Anarchy*. Princeton: Princeton University Press; Petrakis, E. and Anastasios, X. 1996. 'Environmental Consciousness and Moral Hazard in International Agreements to Protect the Environment'. *Journal of Public Economics* 1996 60 (1): 95–110 and Porter, G. and Brown JW. 1991. *Global Environmental Politics*. Colorado: Westview Press.

[424] Keohane, R. 1984. *After Hegemony*. Princeton University Press, New Jersey, p.87.

[425] From Oye, Kenneth A. (ed.). 1985. *Cooperation under Anarchy,* Princeton: Princeton University Press as cited in Neumayer, E. 2001. How Regime Theory And The

self-enforcement is the practice and countries are confronted with the Prisoner's Dilemma[426] where they have an interest in reducing negative environmental impacts on the welfare of the River Basin.

On this note, it must be understood that all countries involved in the management of transboundary water resources believe that they are better off when they cooperate than when they conflict. However, one or some of the countries might have the incentive to do some free riding of other states in the Basin and to enjoy the benefits of such without sharing the costs. In this way, the other countries may suffer and such suffering may trigger conflicts or disagreements as to how a river basin may be managed, benefits shared or how the common resources may be utilised. This justifies the fact that at the end the states will have to negotiate agreements which will now stand as deterrent measures against potential free –riders.

Economic Theory Of International Environmental Cooperation Can Learn From Each Other. *Global Environmental Politics*, 1 (1). pp122-147, p.4.

[426] The prisoner's dilemma is a canonical example of a game analysed in game theory that shows why two purely "rational" individuals might not cooperate, even if it appears that it is in their best interests. See Snidal, D. 1985. Coordination versus Prisoners' Dilemma: Implications for International Co-operations and Regimes, *American Political Science Review* 79 (4):923-942.

What becomes important in this regime is the enforceability of the agreement. The agreement should be self-enforcing since under international law no country can be forced into signing the agreement and once an agreement is signed it should be respected. Thus if the agreement is not self-enforcing there will be problems when one signatory issues threats or related tactics to ensure compliance. The Viena Convention on the Law of Treaties of 1969 makes it clear that when a state has ratified a treaty with another, such ratification makes it absolutely bound to follow the dictates of the treaty in terms of the principle of *pacta sunt servanda*. Therefore, compliance with water treaties is a very important aspect to consider. This means that there should be clear provisions in regard to how compliance will be ensured.

Further, as it shall become apparent in the consideration of case studies below, the regime theory shows that a regime itself can be a vehicle for international learning and the converging of policies of states.[427] Several authors[428] have written that the interaction of

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[427] Haas, P. 1994. 'Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control.' In Kratochwil, F. and Mansfield E. (Eds.) *International Organization: A Reader*. Harper Collins Publishers. NY, pp.128-139.

[428] Mayer, P. Rittberger, V. and Zürn, M. 1993. 'Regime Theory – State of the Art and Perspectives.' In Rittberger, V. (Ed.) *Regime Theory and International Relations.* Oxford, Clarendon Press, pp.391-430, p.394. List, M. and Rittberger, V. 1992. 'Regime Theory and International Environmental Management.' in Hurrel, A. and

states in a regime be it a water regime such as Okavango River Basin or the ones considered below, takes place if a there is fostering of convergence of the values of the states concerned and if there are incentives for the institutionalization of cooperation. This becomes more apparent as one considers that in some regimes there are states which are driven by egoistic ambitions or tendencies but still they find cooperation as necessary, if not they have to learn how to cooperate through some learning processes. Thus:

> The process by which egoists learn to co-operate is at the same time a process of reconstructing their interests in terms of shared commitments to social norms. Over time, this will tend to transform a positive interdependence of outcomes into a positive interdependence of utilities or collective interest organized around the norm in question.[429]

This is quite clear especially in the context of the Incomati River Basin and the Zambezi River Basin where egoists had to reconstruct their interests in terms of shared

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Kingsbury, B. (Eds.) *The International Politics of the Environment*. Clarendon Press, Oxford, pp. 85-109. Mansfield, E. 1994. 'The Role of Regimes' In Kratochwil, F. and Mansfield E. (Eds.) *International Organization: a Reader*. Harper Collins Publishers, NY, pp. 95-96

[429] Wendt, A 1999. 'Anarchy is what States Make of it: The Social Construction of Power Politics.' In, Lipson, C and Cohen, BJ. (eds). T*heory and Structure in International Political Economy: An International Organization Reader.* The MIT Press, p.102.

commitments to social norms governing river basin water resources management and achievement of transboundary water equity. The happenings in the Orange-Sengu River Basin show more precisely that especially when considering the ego of South Africa, over time, this reconstruction tended to transform a positive interdependence of outcomes into a positive interdependence of collective interests hence the cooperation which culminated in the successful Lesotho Highlands Dam Project.

The case studies below provide a background to the understanding of the recommendations on the application of the regime theory done in Chapter 8 below and as a reflection of what is in that chapter international water regimes might be seen as a conflict-mitigating factor as they promote basin wide interstate co-operation. This may assist in the attainment of transboundary water equity. An understanding of the regime theory in the context of international water law in the case studies below is helpful in explaining the dynamics of cooperation and conflict in the concerned river basins.

5.3 The Zambezi River Basin

5.3.1 Geography and geopolitics

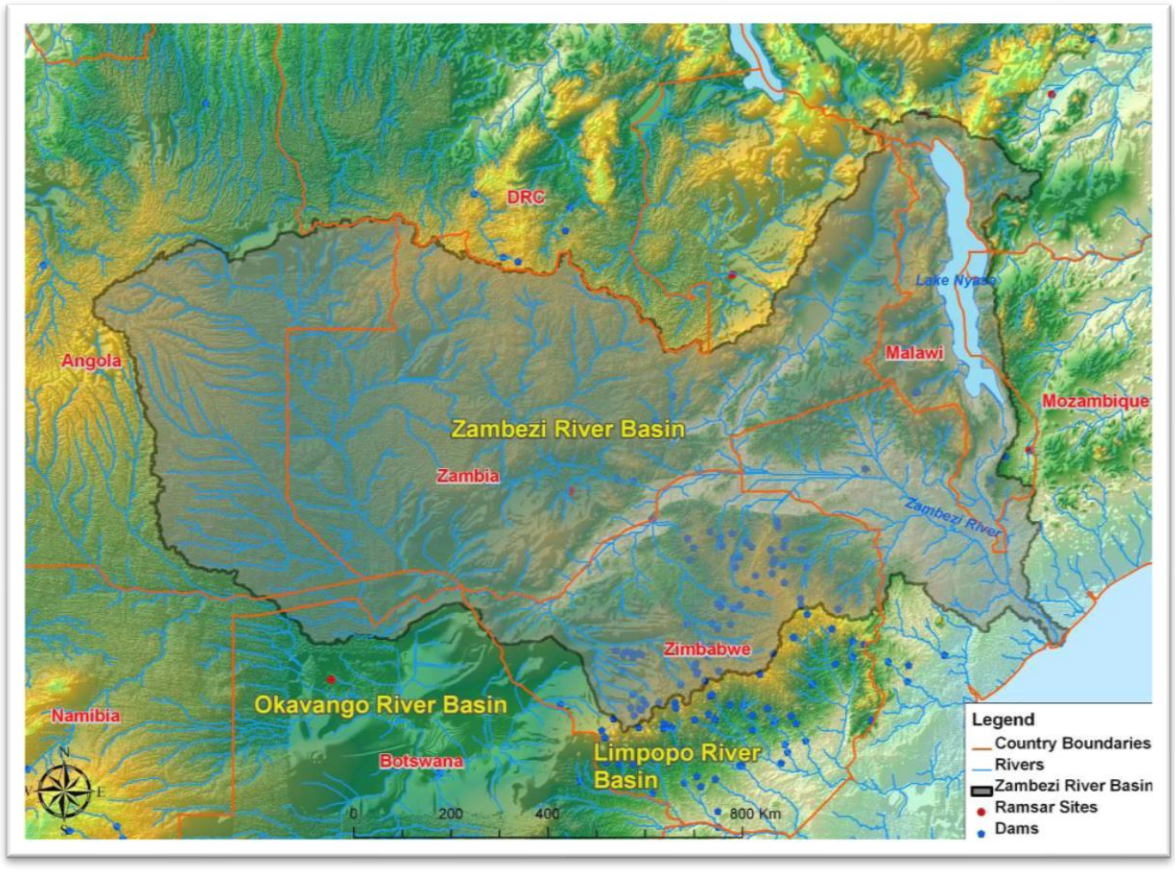
In Southern Africa, the Zambezi is the longest river and it is indeed the largest river basin in the SADC Region. Notably, it is the largest river from Africa which drains into the Indian Ocean. The river flows through six states; it originates in the Angolan Highlands and it flows south-eastwards and turns eastwards forming the border between Namibian and Zambia. It proceeds eastwards forming the border between Zambia and Zimbabwe.

There it is dammed by the Kariba Dam which is shared by Zimbabwe and Zambia. The river then proceeds eastwards into Mozambique and turns south-eastwards after being dammed again at Cabora Bassa Dam again and drains into the Indian Ocean.

From Angola to Mozambique, the Zambezi River has a catchment area which spans across 8 countries which of course contribute different amounts of water flow to the river through some tributaries. The whole catchment area spans about 390 000 km^2 and includes parts of Angola (18%), Botswana (1%), Malawi (8%), Mozambique (12%), Namibia (1%), Tanzania (2%), Zambia (42%) and Zimbabwe (16%).[430] Over 30 large dams have been built in the basin with an estimated total capacity of 221 000 mm^3 and there are about 40 million people living in the Zambezi River Basin. These percentages in terms of catchment area are also relative to the contributions that these countries have to the water flow in the river.

[430] Pietersen K. and Beekman HE. 2008. *Strengthening Cooperation among River Basin Organizations: A Comparative Study of the Linkages Between River/Lake Basin Organizations and the Respective Cooperating National Governments in Seven Major African Basins.* Report Commissioned and financed by the Deutsche Gesellschaft für Technische Zusammenarbeit – GTZ September 2008. GTZ, p.48

Figure 3: The Zambezi River Basin



Zambezi River Basin (UNEP 2008)

Although Angola has most of the water flowing into the River, it does not gain a lot from the projects being undertaken in the main course of the river such as for example having a share of the Kariba Dam hydro-Electric power. Further, other countries such as Mozambique have exclusive rights to the benefits arising out of the Cabora Bassa dam and countries such as Zambia and Zimbabwe which contribute to most of the flow into that dam have to import that electricity. Namibia is however benefiting from irrigation schemes which it started after independence in the Region of Caprivi which is generally fertile and wetter than the rest of the country and one of the successful irrigation projects is the Kalimbeza Rice Projects.

5.3.2 Conflictive and cooperative happenings in the Zambezi River Basin

In the Zambezi River Basin, there have been some historical facts which indicate both cooperation and conflict. During the colonial times Northern Rhodesia now Zambia, Southern Rhodesia now Zimbabwe and Nyasaland now Malawi were under British colonial rule. During this time the British decided to build Kariba and Kafue Dams in the Zambezi River Basin.[431] At the time because all these territories were under British control, the benefits were distributed according to what the colonial master decided. The

[431] See Swain, A. 2004. *Managing Water Conflict: Asia, Africa and Middle East. Routeledge.* London and New York, p.151

Zambezi River project was also politically problematic due to the political tension between South Africa and the Governments of Zambia, Zimbabwe and Botswana caused by South African apartheid policies.[432] However, as time went on, the three territories became independent and they had to find ways of managing this valuable transboundary water resource, thus new strategies emerged.

Plans to establish a river basin organization have existed since the 1980s, but no serious progress was made towards institutionalization of a basin-wide cooperation. In 1987, the governments of the riparian countries adopted the Action Plan for the Environmentally Sound Management of the Common Zambezi River System (ZACPLAN).[433] Under this in October 1987, Zimbabwe and Zambia rationalised the colonial institutional legacy for operating their power stations on the Zambezi River and established the Zambezi River

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[432] Rieu-Clarke AS. 2004. *A fresh approach to international law in the field of sustainable development: what lessons from the law of international water courses?* Unpublished PhD Thesis: International Water Law and Policy International Water Law Research Institute University of Dundee. Available at discovery.dundee.ac.uk/.../A%20fresh%20approach%20to%20international%20law%20in%20the%20. Last accessed 20 August 2010.

[433] Pietersen and Beekman, 2008, *supra* note 30, p.48.

Authority as a body corporate (ZRA).[434] This authority only covered that part of the Zambezi River that forms parts of the border between the two countries thus the other six countries that are part of the Basin were not included.

To govern the affairs of ZRA both countries formed the Council of Ministers consisting of two ministers from each of Zambia and Zimbabwe. The ZRA was the first River Basin Organization to carry out an operational mandate on a defined project within the larger basin.[435] On a more cooperative note, the two countries have a joint budget on the affairs of the basin and mainly the Kariba Complex. This budget is equally shared between the two countries and the size of the share of the hydro-electric power is determined by the annual contributions the respective countries have on the overall operation of the power station.[436]

5.3.3 The Agreements in force

As has been noted above, plans to establish a river basin organization which covered the whole basin have existed since the 1980s, but no serious progress was made towards institutionalization of a basin-wide cooperation. After seeing the successes of the ZRA Angola, Namibia, and Malawi joined these efforts in 1990. In 2002 the SADC Secretariat

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434 *Ibid*.

435 *Ibid*.

436 Pietersen, and Beekman, 2008, *supra*, note 30.

headed several rounds of negotiations until finally on 13 July 2004 the Agreement for establishing the Zambezi Watercourse Commission (ZAMCOM) was signed between Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. The agreement came into force on 26th June 2011 which is 30 days after the depository of the two thirds majority instrument of ratification, in terms of Article 26(1) of the same agreement.

Pursuant to the coming into force of the agreement, an Interim Zambezi Secretariat was created. It was hosted by the Government of Botswana in Gaborone and sponsored by the Norwegian Embassy in Lusaka. After the coming into force of the agreement the Zambezi Water Ministers directed the SADC Secretariat to facilitate the establishment of the ZAMCOM Organs speedily within a year in collaboration with the Interim Secretariat. It is clear from here that the success of this agreement was partly due to concerted efforts by the SADC water office to foster cooperation in this biggest but at the same time volatile basin in the regional block.

The involvement of SADC showed the commitment of the Southern African regional bloc to see cooperation obtaining in the management of transboundary water resources in the region. According to Pietersen and Beekman:

> SADC's role as facilitator during the negotiations towards the ZAMCOM Agreement was fundamental to the conciliation of interests and the procurement of funding. Zambia is not yet signatory to the agreement as

> it is still consulting its stakeholders. The Commission will only come into force when six out of eight countries ratify the Agreement. As of now four countries have ratified. Meanwhile an interim Secretariat has been established and a draft document prepared to guide the process of operation. ZAMCOM would be an international organisation, with legal personality and capacity and power to enter into contract, acquire, own or dispose of movable or immovable property and to sue and be sued. In the territory of each Member State, the Commission would have such legal capacity as is necessary for the proper exercise of its functions. [437]

The objective of Zambezi Watercourse Commission (ZAMCOM) is to promote the equitable and reasonable utilization and development of the water resources of the Zambezi watercourse on a sustainable basis. With this cooperation, the Zambezi River System Action Plan (ZACPLAN) consisted of 19 projects, the so-called Zambezi Action Projects (ZACPRO).[438] However, there have been some voices especially from the Zambian side about how Zimbabwe is getting more than Zambia. For example, the people in Gwembe Valley in Zambia have voiced concern about Zimbabwe piping water from the Zambezi to Hwange Thermal Power Station in Zimbabwe without such power being shared with Zambia yet the Gwembe Valley people were the ones who suffered land

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[437] *Ibid*, p.49.

[438] *Ibid*, p.49.

dispossession and displacement when the Kariba Dam was constructed. Further, Zambia has raising concern about Zimbabwe piping water from the Zambezi River to Bulawayo which was Zimbabwe's second city affected by drought.[439]

Linked to the above, there has also been concern about the border issues in the Kariba Dam. Two countries have often disputed where the border is in the Lake. In connection to this, Zambia has raised concerns about the development of the whole Kariba Complex saying that most of the development has mainly been on the Zimbabwean side with tourism and fisheries succeeding mainly on the Zimbabwean side while the Zambian side remained virtually underdeveloped save for a few fisheries supplemented by some craftworks. [440]

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[439] See Magadza, CHD. 2013. Kariba Reservoir: Experience and lessons Learned Brief. Available at http://www.worldlakes.org/uploads/14_Kariba_Reservoir_ 27February2006.pdf. Last accessed 23 July 2013, p.212.

[440] Pietersen K. and Beekman HE. 2008. *Strengthening Cooperation among River Basin Organizations: A Comparative Study of the Linkages Between River/Lake Basin Organizations and the Respective Cooperating National Governments in Seven Major African Basins.* Report Commissioned and financed by the Deutsche Gesellschaft für Pinheiro, I., Gabaake, G., and Heyns, P. 2003. 'Cooperation in the Okavango River Basin: The OKACOM perspective.

On a more industrial level, there has been more agricultural intensification in Zimbabwe leading to to high demand for water abstraction from the River, fuelling concerns not only in Zambia but also in Mozambique which is the lower riparian state housing a bigger lake being the Cabora Bassa Dam. Narrating this potential conflict, Swain says:

> The intensification of irrigated agriculture in Zimbabwe has reduced the water supply to downstream Mozambique. The threat to Mozambique's water supply is not only limited to Zambia or Zimbabwe's water diversion from Zambezi. The regular droughts and growing water scarcity have prompted many riparian countries to plan for water abstraction projects at the national as well as the local levels. Among these up streamers the major ones are Namibia, Botswana and Malawi. South Africa which is not a riparian also has a large water diversion plan, the Zambezi Aqueduct to meet its water scarcity situation. South Africa intends to withdraw water over 1, 200km from the Zambezi River at Kazungula through Botswana to Pretoria. The implementation of these water diversion projects can potentially disturb the continuing water sharing arrangements

> in the Zambezi basin and also may lead to population displacement which can spill over the borders and create conflicts.[441]

Despite agreements and legal principles in place in the signing of agreements aimed at arriving at transboundary water equity, there was evidence of potential conflict in the Zambezi River Basin. These conflicts may be caused by the individual member state projects which jeopardise water flow into the other country as evidenced above. The intensification of agriculture in Zimbabwe created a chain of reactions and the involvement of South Africa in the extraction of water from the river through Botswana's help may destabilise the region as well.

Indeed, there have also been other events which compound the whole problem illustrated above. Each country has a plan regarding the use of the river and this includes local people's plans as well. For example, the fishing communities in Namibia have been clashing with the tourism operators in Zambia who were denying the former access to the river. This does not augur well at international level. Further, Namibia has already clashed with Botswana about the Kasikili Sedudu Island which is part of the Basin. Commenting on this dispute, thus it is said:

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[441] Swain, A. 2004. *Managing Water Conflict: Asia, Africa and Middle East. Routeledge.* London and New York, p.62.

> Tension rose when a flag was hoisted on the island, prompting vigorous response. This evolved over time to an agreement to refer the matter to the International Court of Justice at The Hague. The International Court of Justice finally ruled in favour of Botswana, thereby settling the dispute in an amicable way. From this it is evident that the favoured channel for dispute resolution, at least between some of the Zambezi riparian states, is by recourse to legal processes. [442]

Although the International Court of Justice resolved the matter judicially, the tensions in the region are still felt and the local communities seem not to be happy with the ICJ decision. There has also been militarisation of the area whenever a conflict between the Botswana and Namibian local communities intensifies especially during the height of the fishing season.[443] In the lower part of the basin, the use of water and related resources of the Shire River have been a source of conflict between Malawi and Mozambique. In spite of the presence of several international as well as localised conflicts there have been

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[442] Turton A. 2010. 'New Thinking on the Governance of Water and River Basins in Africa: Lessons from the SADC Region.' SAIIA/ South African Institute of International Affairs (SAIIA), Report Number 6. Governance of Africa's Resources Programme February 2010, p.41.

[443] *Ibid*.

several efforts for increased cooperation among the basin countries to develop Zambezi on a multi-lateral basis as mentioned above.[444]

5.3.4 Salient principles in relation to transboundary water equity

The ZAMCOM Agreement is based on modern principles of Integrated Water management as contained in the Stockholm Declaration and one of the major aspects of it as mentioned above is to achieve transboundary water equity. The original discussions did not include this aspect and that explains why Zambia withdrew from the negotiations in 1998 because it was unwilling to enter into any agreements which did not include mechanisms for allocation of water entitlements to the member states.[445]

In terms of Article 18 of the Agreement, member states are required to harmonize any other Agreements which were signed before the ZAMCOM Agreement with the ZAMCOM Agreement. This means other bilateral agreements such as ZRA are now subservient to the ZAMCOM Agreement. The ZRA Agreement was signed in 1987 and

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[444] *Ibid,* p.43.

[445] Sustersic, L. 2007. Multilateral Versus Bilateral Agreements for the Establishment of River Based Organizations: Comparison of Legal, Economic and Social Benefits in the Zambian Experience. Southern African Development Community. Gaborone: Botswana, p.3.

that was before the International Watercourse Convention, the 1992 Rio Declaration and the SADC Protocol were signed. As such it is not surprising that the ZRA does not include any principles regarding integrated water resource management (IWRM).

In the context of transboundary water equity however, the preamble to the Agreement states the aim to obtain, for the economic industrial and social development of the two countries, the greatest possible benefit from the natural advantages offered by the waters of the Zambezi River. There is an annexure (Annex 2) which sets out a mechanism of benefit sharing of what comes out of the Kariba Dam being a share of 50% for each country.

However, by the time the ZRA was concluded, there was a lot of development already on the side of Zimbabwe but basically no development on the side of Zambia. Zimbabwe had already built dams in the tributaries to the Zambezi reducing the flow of water. Zambia had not built any dams. It was limited by the agreement to make such development thus it was going to contribute more flow into the lake and with this factual difference the states had to share 50% of the benefits from the Kariba Complex. This runs counter to the principles of equitable and reasonable utilization. Indeed, with the coming into operation of the ZAMCOM agreement which requires equitable and reasonable utilisation, this agreement has to be harmonised with the now new over-arching agreement.

In the ZAMCOM Agreement, the principles of equitable and reasonable utilisation are also included. This inclusion is similar to what is in Article 3 (7)(a) and (b) of the UN Watercourse Convention and Article 3 (8)(a) and (b). The ZAMCOM Agreement further incorporates the principles in the SADC Protocol by reference.[446] In terms of this Agreement the member states are obliged to apply these SADC principles. In addition, and in line with international water law, in the implementation of the Agreement, the Member States commit themselves to the principle of sustainable development; principle of sustainable utilization; principle of prevention of harm; principle of precaution; principle of inter-generational equity; principle of assessment of trans-frontier impacts; principle of co-operation; and principle of equitable and reasonable utilisation. In terms of Article 12(2) of the Agreement, these principles should be interpreted according to the provisions of Article 3 of the SADC Protocol, and developed in accordance with the latest scientific concepts and with the best international practices.

Article 13 deals with equitable and reasonable utilization, a principle which is always vaguely formulated in international agreements. In terms of this provision the Zambezi Watercourse[447] should be managed and utilized in an equitable and reasonable manner.

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[446] See preamble to the ZAMCOM Agreement.

[447] In terms of Article 1 of the agreement; "Zambezi Watercourse" means the system of surface and ground waters of the Zambezi constituting by virtue of their physical relationship a unitary whole flowing normally into a common terminus, the Indian

The rules of application of equitable and reasonable use should be developed by the Technical Committee as provided for under Article 10 (1). In terms of Article 13(3) in the application of ERU the Technical Committee is required take into account all the relevant factors, and circumstances including the following:

a) geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
b) the social, economic, and environmental needs of the Member States;
c) the population dependent on the Zambezi Watercourse in each Member State;
d) the effects of the use or uses of the Zambezi Watercourse in one Member State on other Member States;
e) existing and potential uses of the waters of the Zambezi Watercourse;
f) conservation, protection, development and economy of the use of the water resources of the Zambezi Watercourse and the costs of measures taken to that effect; and,
g) the availability of alternatives of comparable value, to a planned or existing use of the waters of the Zambezi Watercourse.[448]

Ocean. An indicative topographical map of the Zambezi Watercourse is contained in Annex 1 to the Agreement.

[448] Article 13(3) of the ZAMCOM Agreement.

These principles are basically a copy and paste exercise from Article 6 of the UN Watercourses Convention which in turn is a derivation from Chapter II of the Helsinki Rules. Again the criteria are the same as the Agreement which says that the weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is an equitable and reasonable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole. In this light, the principles of equitable utilisation as discussed in Chapter 2 above remain vague.

As a point of emphasis, however, it is required in terms of the Agreement that in the application of the principle of equitable and reasonable use, Member States should take into account the provisions of cooperative arrangements outlined in Article 14(4). Connected to this, the ZAMCOM Agreement requires a Strategic Plan to be developed by a Technical Committee established in terms of Article 9 of the Agreement to regularise the principles of transboundary water equity in the Basin. Commenting on the Strategic Plan in the context of transboundary water equity, Sustersic says:

> The Strategic Plan is a key element in the Agreement, in that member states are required to conduct their management and development plans, projects and programs relating to the Zambezi Watercourse, in accordance with this plan. It is the over-arching framework for the basin's development, which is to be prepared in collaboration by all riparian

> countries; it will foster regional cooperation and guide harmonized management of the basin.[449]

The ZAMCOM then coordinates the implementation of the Strategic Plan and source financial and technical support for its implementation. Further general analysis of how these agreements are formulated will be discussed below where all agreements to be considered are examined and decoded.

The management of Zambezi River waters is also affected by the Kavango Zambezi Trans frontier Conservation Area (KAZA), Trans-frontier Conservation Area (TFCA). This is a wider initiative by the Governments of Angola, Botswana, Namibia, Zambia and Zimbabwe, centred around the Caprivi-Chobe-Victoria Falls area.[450] It is believed that this is potentially the world's largest conservation area.[451] The map below shows the extent of the KAZA TFA.

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[449] Sustersic, 2007 *supra*, p.4.

[450] See OKAKOM, 2012. 'The Kavango Zambezi Transfrontier Conservation Area (KAZA).' OKACOM. Available at: http://www.okacom.org/okacoms-work/partners-and-projects/projects/associate-projects/kaza. Last Accessed 26 March 2012

[451] *Ibid*

Figure 4: The extent of the KAZA TFA

Source: OKACOM 2012

Therefore, this TFA encompasses some of the principles in ZAMCOM and goes beyond water conservation and management, hence the two supplement and complement each other on various aspects of environmental management as it was established with a vision to be a world-class trans-frontier conservation area and tourism destination in the Okavango and Zambezi River Basin regions of the five countries mentioned above within the context of sustainable development.

According to OKAKOM, the KAZA TFCA process evolved from two initiatives: the Okavango Upper Zambezi International Tourism Initiative (OUZIT) and the "Four Corners" Transboundary Natural Resource Management Initiative.[452] Unlike its predecessors, the KAZA TFCA initiative is owned and led by the governments of the five partner countries, with a clear focus on conservation as the primary form of land use and tourism a by-product.[453]

5.4 The Orange-Senqu River Basin

The Orange River originates in the mountainous areas between Lesotho and South Africa. It straddles the mountains in north western areas until it forms the border between

[452] *Ibid*

[453] *Ibid*

Namibia and South Africa and drains into the Atlantic Ocean. The River is known as Senqu in Lesotho whereas in South Africa some call it the Gariep River deriving this from the Nama language. The name Senqu comes from the Sotho Language in Lesotho and in that county it is known by that name.[454] It is considered to be the most developed River Basin in Southern Africa and some authors have described it as "the most over-developed river in the region."[455] The paragraphs below will show the dynamics of cooperation and conflict in this unique river which one of the OKACOM member states – Namibia – also shares.

5.4.1 Geography geopolitics and hydro politics

As the map below shows, the Senqu River tributaries in Lesotho, the Vaal River in South Africa and the Fish River in Namibia are the main tributaries of the Orange River. In this regard the Orange River Basin is shared by four riparian countries being: Lesotho, South Africa, Botswana and Namibia. The river has a lot of dams along it; South Africa has 24 large dams, Namibia has five dams and Lesotho has two dams along this river. Generally, the river originates in a region with substantial amounts of rainfall, making it a perennial

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[454] Earle, A Malzbender D, Turton A and Manzungu, E. 2005. *A preliminary Basin Profile of the Orange/Senqu River.* African Water Issues Research Unit (AWIRU) - University of Pretoria Water Institute.

[455] Swain, A. 2004. *Managing water conflict: Asia, Africa and the Middle East*. Routledge, p.143.

river with significant volumes of water-flow. However, abstractions in South Africa for irrigation and other industrial purposes have led to reduced flow downstream.[456]

South Africa being the most powerful militarily and economically among the riparian states, does not seem to be deterred by the concerns of the other nations in so far as its activities are concerned. In fact, it has blamed other states for the developments they plan or are initiating in their territories which have the potential of negatively affecting the water flow into its territory. As shall be explored in more detail below, the projects in Lesotho have proven to be the most controversial of all the developments done along the river.[457]

As Figure 5 of the Basin shows below, Lesotho is an upper riparian, it is a major supplier of the flow to the river which supplies most of the industrial region of Gauteng in South Africa. Therefore, any development done in Lesotho has a direct impact on the availability or quality of water in the river as it flows into the South African province of Gauteng. Although Lesotho is a significant contributor to the flow into the River, the country is completely surrounded by South Africa and it is politically and economically weaker than South Africa and the rest of the riparians. Even if Namibia, Botswana and South Africa were more powerful than Lesotho they would be the most vulnerable to

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[456] *Ibid*, p.144.

[457] *Ibid.*

acute water shortages with Botswana and Namibia being the most arid of all the riparians.[458]

Figure 5: The Orange River Basin

[458] Earle, et al., 2005 *supra*, note 54.

Source: Water and Forestry, Republic of South Africa, 2008[459]

As noted above, South Africa needs Lesotho's cooperation in the development of the river upstream to meet the development needs of her burgeoning economy.

[459] Water and Forestry, Republic of South Africa, 2008: Available at: http://www.dwaf.gov.za/orange/. Last Accessed 26 February 2012.

5.4.2 Conflictive and cooperative happenings in the Orange River Basin

Lesotho is generally a water surplus country and does not utilize much of the water that it supplies to the Orange. In this light, South Africa has had plans to, and has since implemented projects to, alter the hydrology of the river upstream. South Africa has undertaken several projects to transfer water from the upper regions of the river within its own territory and it has its eye on a longer term project to develop the river in Lesotho itself diverting that river in Lesotho to its own territory where the water is needed.[460]

South Africa's intentions may be good for itself but may at the same time be viewed with scepticism and as underscored by it being an 'economic bully.'[461] This comes to the fore when one considers that the project to develop and or divert Lesotho waters into South African desperate regions has been opposed for more than half a century now though with the new democratic government tensions seem to have been eased and the project has evidenced some progress. Indeed, this project has been a long way coming but has been met by significant hydro politics in the region.

> Although the idea of transferring water from Lesotho to South Africa's industrial hub had been under consideration since the 1950s, the project was handicapped by payment-related disagreements coupled with the lack of cooperative efforts to manage the river system, which was largely due

[460] Swain, A. 2004, *supra* note 455.

[461] *ibid.*

> to the souring relations in the wake of the apartheid system…. Intermittent diplomatic efforts continued between the two countries to cement a plausible, acceptable, and lasting agreement. Notwithstanding the larger political turmoil, the two countries were able to agree on a final feasibility study and negotiate a Treaty on October 24, 1986 that led to the establishment and implementation of the Lesotho Highlands Water Project (LHWP), the largest water transfer scheme in South Africa.[462]

The Lesotho Highlands Water Project (LHWP) is designed to build six dams, two hydro-electric stations, three pumping stations and 225 Kilometres of tunnels through the Drakensberg watershed that divides the Vaal from the Orange River catchment areas as the map above shows. Construction work started in 1988 and all the four phases were planned to be completed by 2017, costing 8 billion US$ over 30 years and in 2004 this made the LHWP the single largest infrastructure development in Africa.[463] It was actually reported that the cost of the Project was 800% the Gross National Product (GNP) of Lesotho.[464]

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[462] Priscoli, JD and Wolf, AT. 2009. *Managing and Transforming Water Conflicts.* Cambridge University Press.

[463] Swain, A. 2004, *supra*, note 455, p.154.

[464] *Ibid.*

Under the project, the construction of the Katse Dam has already been completed and it stands at 186m, making it the highest dam in Africa. Lesotho was set to be able to export two billion cubic meters of water to South Africa every year and at the same time generate hydro-power for both countries,[465] a clear case of the fruits of cooperation which were first of all shrouded in disagreements and conflictive positions in the 1970s and early 80s especially. The other phases included the construction of dams and one notable development would have been the transfer of water from the Orange/Sengu to the Vaal River, then South Africa would have had to pay pay Lesotho royalties for this transfer of water for the next 50 years when the deal expires and would have to be re-negotiated.

The LHWP was not devoid of local politics as well. It threatened the livelihoods of some traditional communities around it. When all phases were completed, it would lead to large scale enclosure of communal grazing land, using communal farmland for construction of communication infrastructure such as roads and also creation of space for transmission lines from the hydroelectric power plant. Already at the stage of its implementation now, downstream environmental effects of the large scale diversion of waters were already being felt.[466]

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[465] *Ibid.*

[466] See Sain 2004 *supra*. See also Horta, K. 1995. The Mountain Kingdom's White Oil. The Lesotho Highlands Water Project" *The Ecologist* 1995, 25(6):pp227 -231. Horta,

On the lower Orange, there have also been some shimmering tensions between South Africa and Namibia over the lower ends of the River. The dispute between Namibia and South Africa, regarding the lower reaches of the Orange River, reflect territorial sovereignty and international boundary issues.[467] Namibia was not getting a full share of the river since in terms of the old agreements between the two countries; the border of the two countries was not placed on the deepest or middle part of the river according to international law but was put on the high water mark on the Namibian side. This means that at some point in time Namibia would not have a share in the river when the water levels recede. Therefore, collaborative river management has been a concern to the state officials in both Namibia and South Africa, namely regarding the portion of the river that delineates their shared borders[468] and negotiations have been marred by mistrust and South African stance of sticking to the old agreements and not principles of maritime boundaries under international law.

K. and Covwerdale, Dams & Distress for Kingdom in the Sky.' *People & the Planet*, 1996 5(3):24-25.

[467] Ashton, 2000, *supra* note 176.

[468] Heyns, PPM., and Turton, A. 2008. Transboundary Water Resource Management in Southern Africa: Meeting the Challenge of Joint Planning and Management in the Orange River Basin, *Water Resources Development*, 2008 24, (3):371-383.

In 1978, a Joint Water Committee was established to facilitate mutual cooperation and negotiations. With the independence of Namibia in 1990, negotiation efforts between the two states continued, resulting in the 1992 agreement[469] and the establishment of the Permanent Water Commission (PWC) and the Vioolsdrift and Noordoewer Joint Irrigation Scheme (VNJIS).[470]

5.4.3 The Agreements in force

There is one Basin-wide Agreement and two older bilateral agreements in the Orange River Basin. The bilateral agreements came into existence before the Basin wide agreements and will herein be considered first and the Basin wide agreement will be considered thereafter. One bilateral agreement governs the upper ranges of the river and the other governs the lower ranges. South Africa is a member of both whereas Lesotho and Namibia are the other members respectively. Specifically, the agreements are:

a) Treaty on the Lesotho Highlands Water Project between the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa signed at Maseru, October 24, 1986.

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[469] Heyns, P. 2004. *Achievements of the Orange-Senqu River Commission in Integrated Transboundary Water Resource Management.* Paper presented at the General Assembly of the International Network of Basin Organisations.

[470] Ibid.

b) Agreement between the Government of the Republic of Namibia and the Government of the Republic of South Africa on the establishment of a Permanent Water Commission signed at Noordoewer, September 14, 1992.

The first agreement is a very technical document which was carefully drafted considering the complexity of the project and environmental concerns surrounding it. It is the agreement under which the LHWP was being implemented. This agreement came after years of mistrust and political wrangling mixed with hydro-diplomacy which is not relevant to include in detail here. When it was eventually signed, it was clear that the two countries really needed each other. The general tone of the agreement shows the need for mutual benefit and or equitable benefit sharing. South Africa was in dire need of water for its industrial growth, Lesotho on the other hand was a poor country without so much concern about water shortages because the water was basically naturally abundant. With her poverty Lesotho would need investment and thus allowing South Africa to invest in infrastructure and power generation. This helped economic growth for Lesotho as well in the long run.

In terms of Article 4 of the Agreement, the purpose of the Project was to enhance the use of the water of the Senqu/Orange River by storing, regulating, diverting and controlling the flow of the Senqu/Orange River and its effluents in order to effect the delivery of specified quantities of water to the Designated Outlet Point in the Republic of South Africa and by utilising such delivery system to generate hydro-electric power in the

Kingdom of Lesotho. In terms of Article 12, Lesotho would get royalties for the diversion of the waters from its territories to South African desperate provinces needing such for industrial growth. South Africa would also benefit from the electricity generated from the dams.[471] To oversee these projects and benefit sharing arrangements, Permanent joint commission was established under the Agreement.[472]

This technical and somehow complex Agreement will not be considered in detail under this study. Suffice to say that it can be anticipated that the benefits of this arrangement would overshadow and outweigh future environmental costs, thus tensions would not be expected at least in the near future. Indeed, the impact of water in enhancing cooperation can be seen from this huge project. [473]

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[471] See also Article 13 of the Agreement

[472] See Whann, CA. 1995. *The Revenue Imperative and States Management in Lesotho.* The University of Wisconsin, Madison, see also Abukhater, AB. 2010. *Equity in the Context of Bilateral, International Water Allocation Treaties in Arid Regions: An Interdisciplinary, Transformative Approach to Conflict Resolution.* Unpublished Dissertation Presented to the Faculty of the Graduate School of The University of Texas at Austin in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy, May 2010, p.85-86.

[473] Abukhater, AB. 2010, *supra*, note 448, p.18.

Water here can be regarded as a catalyst for cooperation as South Africa and Lesotho were able to find common ground and capitalise on the shared water resources to reach a satisfactory agreement that caters to both of their respective needs. The idea here is that water acted as an incentive for disputing states to enter into negotiation for the purpose of settling their disputes. [474] This Agreement can be regarded as an example of a positive answer to the question regarding whether when countries have a water agreement, there is high propensity towards cooperation. This aspect will further be decided in the analysis in Chapter 8 below where all the Chapters will be weaved together in an analysis of the hydro politics of the Okavango which was the main case study.

The second bilateral agreement between the Government of the Republic of Namibia and the Government of the Republic of South Africa which established a permanent water commission was signed at Noordoewer, on September 14, 1992. This agreement is mainly concerned with the establishment of a tradition of good neighbourliness and co-operation between the Parties with regard to the development of mutual projects in respect of water resources of common interest contribute towards the prosperity and welfare of their peoples.

It also aims at consolidating the existence friendly relations between Namibia and South Africa by promoting regional water resource development on the basis of the rules

[474] *Ibid.*

relating to the uses of the waters of international rivers approved in 1966 at Helsinki by the 52nd Conference of the International Law Association. The incorporation of these principles by reference may be understandable as one takes note that as explained in Chapter 2 above, at this time only the Helsinki Rules were regarded as a general framework under which international water agreements could be formulated. Chapter II of the Rules deals with equitable and reasonable utilisation of internationally shared waters.

Without going into details of this rather very short agreement, it is important to note that the implementation of this agreement has been problematic and the problems will be explored in the general analysis at the end of this chapter. Namibia has always had frosty political relationships with South Africa especially due to the Namibian resistance against the South African occupation during apartheid. It was not until 1990 that Namibia, through the efforts of the international community, managed to gain independence and end South African illegal occupation. Even then Namibia still had to negotiate with the South African Government which was now softening towards democracy to have Walvis Bay returned to Namibia, an effort which bore fruits only when Nelson Mandela became President of a new and democratic South Africa.[475]

[475] In in the year 1994.

The utilisation of the resources of the Orange River has never been equitable in the eyes of Namibia and there have always been grumblings about the border issue as discussed above. Be that as it may, the two countries found common ground in 1992 and concluded an agreement regarding the utilization of the Orange River water resources. This agreement, among other things, creates a Permanent Water Commission (PWC) which is tasked with advising the parties on matters related to the management and development of the Lower Orange River where it forms the border between the two countries. To effectively achieve this task, the PWC saw the need to gather data and basically do a baseline study called Lower Orange River Management Study (LORMS) and completed it in 2008.[476]

Namibia finds itself sharing the last part of the Orange River and does not have control over what happens on the upper reaches of the river. Thus, there was a geopolitical incentive to see to it that Namibia can have a say regarding what the other riparian states can or cannot do. However, South Africa maintained an upper hand regarding what would flow out to the sea because of her geo-political and economic position. In fact, South Africa determined what could flow through that part shared by the two countries because it controlled the dams constructed all along the river in her upper reaches including the

[476] Heyns, et al., 2008, *supra*, note 173.

dams in the territory of Lesotho as shown above. Therefore, this bilateral accord served the interests of both states and set the stage for future socio-economic development.[477]

There were two treaties regulating how states should relate to each other in so far as the Orange River is concerned. These two treaties included South Africa but excluded Botswana. Therefore, Botswana was not a player in all these treaties but was an ephemeral contributor of the waters that flowed into the Orange River though a very negligible amount was discharged. This spells that there was potential for conflict in the regime of the Orange River should a holistic or an integrated system not be created. The three treaty countries, South Africa, Namibia and Lesotho created the Orange Senqu River Commission (ORASECOM) in 2000 but it still excluded Botswana.

There were no foreseeable or immediate threats to the stability of the regime system as it stood but potential for conflict or disputes existed as highlighted above. These weaknesses lead to a situation whereby it is reasonable to argue that there is more likely going to be cooperation where there is a watercourse agreement but that cooperation heavily depends on the nature of the agreement and the strengths of the institutional

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[477] Abukhater, AB. 2010, *supra*, note 448,p.87. See also Heyns, PPM., and Turton, A. 2008. 'Transboundary Water Resource Management in Southern Africa: Meeting the Challenge of Joint Planning and Management in the Orange River Basin', *Water Resources Development*, 2008 24, (3):371-383.

arrangements therein created. The politics surrounding this and how conflict may arise will be made clearer below where the concept of hydro politics is decoded in detail.

5.4.4 The ORASECOM Agreement

An agreement between the Governments of the Republic of Botswana the Kingdom of Lesotho the Republic of Namibia and the Republic of South Africa on the Establishment of the Orange-Senqu River Commission was concluded on 3 November 2000 in Windhoek, Namibia. The agreement was concluded after the SADC Protocol, it refers also to the Protocol, the UN Watercourses Convention and the Helsinki Rules. It shows in the preamble that the state parties are committed towards the realisation of the principle of equitable and reasonable utilisation, as well as the principle of sustainable development with regard to the Orange River Basin.

5.4.5 Salient principles in relation to transboundary water equity

The SADC Protocol which was later revised was signed the same year as the ORASECOM Agreement, but the later does not really incorporate the principles in the former. The ORASECOM Agreement seems to be mainly concerned with extending and consolidating "the existing tradition of good neighbourliness and friendly relations between the Parties by promoting close and coordinated co-operation in the development of the resources of the River System"[478] and does not mention the "judicious, sustainable

[478] See Preamble.

and co-ordinated management, protection and utilization of shared watercourses"[479] or the "unity and coherence of each shared watercourse" on which the Revised Protocol is based.[480]

However looking at transboundary water equity, Article 5 of the Agreement gives powers to the Council to take all measures required to make recommendations, or to advise the Parties, on the equitable and reasonable utilisation of the water sources in the River System to support sustainable development in the territory of each Party. Further in terms of Article 7.2 of the agreement, the State Parties shall,

> …in their respective territories, utilise the resources of the River System in an equitable and reasonable manner with a view to attaining optimal and sustainable utilisation thereof, and benefits therefrom, consistent with adequate protection of the River System. The term "equitable and reasonable" shall be interpreted in line with the Revised Protocol on Shared Watercourses in the Southern African Development Community (SADC) Region.

In terms of the agreement, the Parties are enjoined, in utilising the resources of the River System in their territories, to take all appropriate measures to prevent the causing of

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[479] See Article 2 of the SADC Revised Protocol.

[480] See Article 3 of the SADC Revised Protocol.

significant harm to any other Party. Again, the term “significant harm” is to be interpreted in line with the Revised Protocol. The latter deals with these aspects in Article 3(7). This Article and in fact Article 7.2 of the ORASECOM Agreement was copied verbatim in part from Article 3(7) of the SADC Revised Protocol. Article 8 of the Revised Protocol again reproduces Article 6 of the UN Watercourses Convention which in turn is derived from Chapter II of the Helsinki Rules. The vague provisions are inherited successively here and one wonders whether with this trend, transboundary water equity will ever be achieved under the water regimes in place in southern Africa. This problem forms part of the broader Southern African water legal complex dealt with above.

In terms of Article 1(4) of the Agreement, nothing should negatively affect the prerogative of any number of the Parties to establish among themselves river commissions with regard to any part of the Orange River Basin. If the member states establish any Commission, any such Commissions must be subordinate to ORASECOM and if there are already some existing commissions such as the ones which have already been dealt with under bilateral agreements discussed above, such existing Commissions should liaise with ORASECOM in terms of the Agreement.

5.5. The Incomati River Basin

As a justification for the choice of this River Basin, it is submitted in Chapter 3 above that the Incomati River Basin is small but unique. The major reason being that water use

is intense, with 50 percent of the water generated in the basin being withdrawn.[481] Further the basin presents good evidence for neo-Malthusians who predict water wars due to population explosion and ensuing conflict over resources. This is because there has been evidence of water scarcity since the mid-1980s. It has become more severe since the 1990s[482] and is probably reaching threatening levels this decade. Researchers in the Basin have concluded that competition over water is real, and water abstractions are fast approaching the limits of sustainability.[483]

From the perspective of hydro politics which affects transboundary water equity, the basin has experienced turbulent political happenings. The basin has seen a change from colonial rule to independent one-party states and subsequently a transition to democratic rule as well as the end of the apartheid regime. These changes were frequently accompanied by violent interventions which affected the achievement of transboundary water equity as shall be shown below. In this light, this river basin is typical of a case study that helps in answering the questions regarding cooperation and conflict dynamics and how they together with other factors foster cooperation.

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481 See Vas AC. and van der Zaag, P. 2003. *Sharing the Incomati Waters: Cooperation and Competition in the Balance.* UNESCO –HP PCCP. Series Publication.

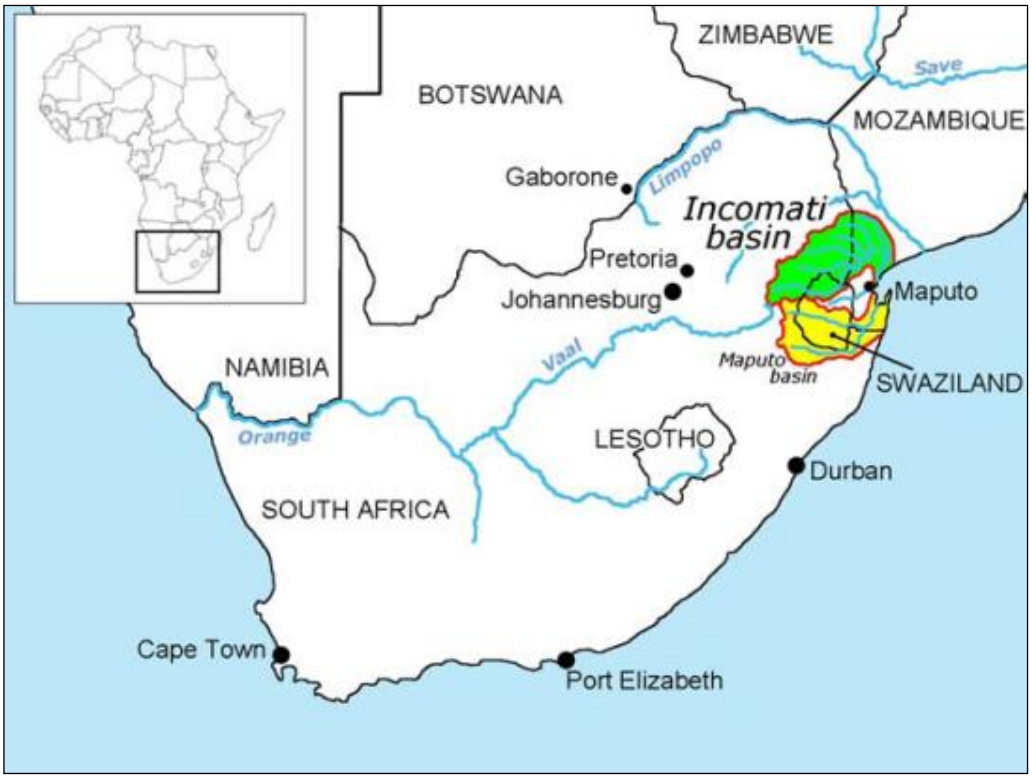
482 *Ibid.*

483 *Ibid.*

5.5.1 Geography and geopolitics

The Incomati River has an interesting geography as well as an interesting cooperative and conflictual background. The river is shared by three riparians being South Africa, Swaziland and Mozambique. The river emerges from South Africa making it an upstream system and flows into Swaziland a lower riparian state and then flows back into South Africa, now making South Africa a lower riparian in this case. The river then flows into Mozambique which of course remains a lower riparian state. The figure below shows the map of the Basin.

Figure 6: The Incomati River basin



Source: on Carmo and van der Zaag[484]

The river is strategically important for South Africa because its energy base is within the Incomati River Basin with most of the coal deposits located in the Limpopo Basin. The Incomati is a good source of water needed in South Africa's thermal power stations and especially serves the country well through the electricity generation. For this reason there are a number of transfers in the basin and this can be regarded as resource capture.[485] The river is also important for Swaziland because hydropower is generated at Magunga Dam on the Komati and irrigated agriculture forms the foundation of the Swazi sugar export economy. Mozambique benefits quite substantially as well since the river provides the Capital Maputo with water in a semi-arid environment.[486]

[484] Carmo, VA and van der Zaag P. 2003.Sharing the Incomati Waters: Cooperation and Competition in the balance. UNESCO-IHP, PCCP Series Publication.

[485] Turton, A. 2008. "The Southern African Hydropolitical Complex," in Varis, O. Tortaradja, C and Biswas AK. 2008. *Management of Transboundary Rivers and Lakes*. Springer-Verlag. Berlin. Hidelberg, pp.21 – 79, p.40.

[486] *Ibid*, p.40.

5.5.2 Conflictive and cooperative happenings in the Incomati River Basin

As alluded to above, the basin has a long hydro political history.[487] The cooperative arrangements of the basin start mainly with the agreement entered into between South Africa and Portugal the then colonial master of Mozambique and Angola in 1926. The agreement regulated the Cunene River in the northern part of Namibia. This Agreement included other rivers of interest which included the Incomati River, the Limpopo and Maputo. This Agreement was called the First Use Agreement and it is foundational to all cooperative and conflictual happenings in the region.[488]

The earlier disputes in the Incomati River Basin started in the 1940s when Swaziland embarked on a plan to set up an irrigated sugarcane plantation using Incomati waters. There were protracted negotiations and squabbles about the project but later on South Africa gave in to the demands of the British High Commission on Swaziland to let 7,7 m^3/s of flow be diverted into a canal for the new project. It was further agreed that 1.27 m^3/s should not be diverted but be left as normal flow to downstream South Africa.[489]

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[487] For a comprehensive historical background of cooperative and conflictive happenings see Vas AC. and van der Zaag, P. 2003. *Sharing the Incomati Waters: Cooperation and Competition in the Balance.* UNESCO –HP PCCP. Series Publication.

[488] *Ibid.*

[489] Van Niekerk, P. 2005. International Water sharing: the First step in Conflict resolution – Agree on the base-line information. In, Mathur, GN. And Chalwa, AS.

This agreement, however, did not stand as it was first set to be. In 1954, Swaziland increased the flow to 9.71m^3/s without consulting South Africa. South Africa objected to the increase but Swaziland maintained its position saying that it did not see any problems with the increase because such increase did not decrease the agreed 1.12 m^3/s which remained as normal flow in the river to downstream South Africa.[490] The matter raised heated confrontations and the two countries never solved them.

It seems there was a lot of tit-for-tat between South Africa and Swaziland and the situation was fuelled by the Cold War to some extent as shall be seen much clearer below. South Africa also continued with its own projects without consulting Swaziland. It announced its intention to build the Nooitgedacht Dam. The dam was intended to store and supply water to its thermal power station in the basin. The announcement which was contained in a White Paper mentioned the international character of the river and that South Africa would consult Swaziland on this new development and that "it is not anticipated that any objections can possibly be raised against the scheme". However, no consultations were initiated, the construction of the dam went ahead and was completed in 1962.[491] In 1964 the so called Second Use Agreement was signed between South Africa and Portugal and

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2005. Water for Sustainable Development – Towards Innovative Solutions. Volume 1, pp 49 -60, p.52.

[490] *Ibid*, p.52.

[491] *Ibid*, p.53.

as the previous agreement it was also applicable to the Cunene, Incomati Limpopo and Maputo Rivers.[492] In 1967, Swaziland acceded to the second Use Agreement showing a historic evolution of the hydro politics in the basin or region in general.[493]

In 1983, a Tripartite Permanent Technical Committee (TPTC) was established and became the first basin-wide regime in the rest of Southern Africa applying to the Incomati, Limpopo and Maputo river basins.[494] However, in the 1980s, Mozambique was gripped by a relentless civil war and water negotiations were not high on its priorities and

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[492] Turton, A. 2008. "The Southern African Hydropolitical Complex," in Varis, O. Tortaradja, C and Biswas, AK. 2008. *Management of Transboundary Rivers and Lakes*. Springer-Verlag. Berlin. Hidelberg, pp21 – 79, p.41. See also Ashton, PJ. Earle, A. Malzbender, D. Moloi, B Patrick, MJ and Turton, AR. 2005. *Compilation of all the International Agreements entered into by South Africa with other States. Final Water Research Commission Report for Project K/1515*. Water Research Commission (WRC), Pretoria; Heyns, PS. 1996. "Managing Water Resource Deveplopment in Cunmene River Balsin," in Howsam, P. Carter, RC. (Eds). "Water Policy: Allocation and Management in Practice," *Proceedings of International Conference On water Policy*, Cranfield University, 23 – 24 September 1996. E and FN Spon, London. PP259 – 266.

[493] Turton, A. 2008, *supra*, note 492, p.41.

[494] *Ibid*.

thus it failed to attend many basin meetings or air its views about the developments by other countries. At the same time Mozambique had some strained relations with South Africa related to the Cold War. During this time, Mozambique constructed the Corumana Dam without consulting the other riparians. In addition the Committee did not function without hiccups because of strained relations between South Africa and Swaziland.[495] Thus as Turton reports, as a direct result of this failure, a bilateral agreement was reached between Swaziland and Mozambique in 1991 called the Joint Permanent Technical Water Commission (JPTWC), but it did not function well.

In 1991 South Africa announced plans to construct the Inyaka Dam with a capacity of 120million m^3 on the Mariti River which is a tributary of the Sabie River.[496] The intention was to secure water for supply to the town of Bosbokrand. Mozambique was concerned that this plan could have a negative impact on its Corumana Dam with a capacity of 878

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[495] Vas, AC. Pereira, AL. 1998. The Incomati and Limpopo International River Basins: A View from Downstream. In Savenije, HG. Van De Zaag, P. (eds). 1998. The Management of Shared River Basins. Experiences fron SADC and EU. Ministry of Foreign Affairs, The Hague, pp112 – 124.

[496] Van Niekerk, P. 2005. "International Water sharing: the First step in Conflict resolution – Agree on the base-line information," in, Mathur, GN. and Chalwa, AS. 2005. *Water for Sustainable Development – Towards Innovative Solutions*. Volume 1, pp 49 -60, p.54.

million^3 just downstream near its border with South Africa, thus it requested that a water sharing agreement be reached among the riparians and that there should be a Joint Incomati Basin study before the project could commence.[497] South Africa and Swaziland rejected this condition, citing the urgency of the dam and arguing that Corumana Dam was small and thus could not be affected. In March 1992, South Africa declared that the construction of the dam would commence. Indeed it did in 1995 and the dam was completed in 2001 despite opposition from Mozambique.[498]

Two bilateral agreements were then negotiated between South Africa and Swaziland in 1992. The first established the Joint Water Commission (JWC1) and the second established the Komati Basin Water Authority (KOBWA). This was based on the successful model that evolved from the Lesotho Highlands Water Project already dealt with above. In 1996 a Joint Water Commission (JWC2) was established bilaterally between South Africa and Mozambique to manage the Incomati and the Limpopo basins.[499]

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[497] *Ibid*.

[498] *Ibid*, p.55.

[499] Turton, A. 2008, *supra*, p.41. See also Turton, AR, 2004. "The Evolution of Water Management Institutions in Select Southern African International River Basins," in Biswas AK. Unver, O, Tortajada, C. (eds). *Water as a Focus for Regional Development*. Oxford University Press, London, pp251 – 289.

The Joint Incomati Basin study was resumed in 1999 with funding from Mozambique, more than 10 years after the decision to conduct them was made. In 1995 meetings of the TPTC which were disturbed by several events resumed. In 1998, Mozambique announced that it would like an interim agreement on water sharing in order to give them a sounder footing to obtain external funding for much needed development.[500] The drafting of the water sharing agreement was commenced and the experts struggled with the document. They met more than twenty times in the drafting process without finalising it.[501] On 29 August 2002, the Tripartite Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland on the Cooperation on the Protection of Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses was signed by the three mentioned countries in South Africa.[502]

5.5.3 The Agreement between Mozambique South Africa and Swaziland

As already mentioned above, the Tripartite Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland on the Cooperation on the Protection of Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses was signed in Johannesburg on 29 August 2002, by

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[500] Van Niekerk, P. 2005, *supra*, note 496, p.55.

[501] *Ibid*.

[502] Specifically in Johannesburg.

the three mentioned countries. The short name for the agreement is TIA (Tripartite Incomati Agreement).

This agreement is a complex one and it incorporates some intricate water sharing and water allocation formulae. It seems the drafters of this agreement devised a method which, to a great extent, tried to deal with equal or proportionate allocation of water resources within the basin as much as possible. It remains questionable however, whether under the agreement, there will be achievement of transboundary water equity. The analysis below will help in decoding this issue.

5.5.4 Salient considerations

The Agreement generally follows the provisions of the revised SADC Protocol but at the same time considers the history behind the Agreement as elucidated above. Thus, the state parties resolved to pursue the guidelines established by the Agreement between the Government of the Republic of South Africa and the Government of the Republic of Portugal in regard to Rivers of Mutual Interest and the Cunene River Scheme signed on 13 October 1964, to which the Republic of Mozambique acceded in 1975 and the Kingdom of Swaziland acceded to in 1967.

The preamble is rich with very promising phraseology. It is stated that “the state parties take into account the modern principles and norms of International Law as reflected in the UN Watercourses Convention and are conscious of the mutual advantages of

concluding agreements on co-operation on shared watercourses."[503] Further it states that "the state parties are determined to co-operate and seek mutually satisfactory solutions for the needs of the Parties towards water protection and to the sustainable utilisation and development of the water resources with a view to improving the standard of living of their populations."[504]

In Article 1 which contains a lot of definitions, the agreement uses the same definition of watercourse as used in the UN Watercourses Convention and the SADC Protocol for a "watercourse."[505] The general principles of the agreement are listed in Article 3 and are sustainable utilization principle; equitable and reasonable utilisation and participation principle; prevention principle; and co-operation principle. In terms of Article 7 the Parties should be entitled, in their respective territories, to optimal and sustainable utilisation of and benefits from the water resources of the Incomati and Maputo watercourses. They have to do this taking into account the interests of the other parties concerned, consistent with adequate protection of the watercourses for the benefit of present and future generations.

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[503] Preamble to the agreement.

[504] Preamble to the agreement.

[505] Article 1of the Agreement states: "watercourse" means a system of surface and ground waters constituting by virtue of their physical relationship a unitary whole normally flowing into a common terminus such as the sea, lake or aquifer.

In terms of Article 1(6) of Annexure II to the Agreement if more water is made available through structural and non-structural measures in the Incomati or Maputo watercourses, the State Parties shall give priority to the water uses for domestic, livestock and industrial use, as well as ecological water requirements as recognised by the TPTC, when considering the allocation of the water, taking into account the equitable and reasonable utilisation by the State Parties. Further, just like other Basin-wide agreements analysed herein, the stipulations of existing bilateral and trilateral agreements among the Parties concerning the present subject will remain in force as far as they are not in conflict with this Agreement.[506]

One interesting difference which this agreement provides for which is missing in some water agreements is a mechanism for dispute resolution. In terms of Article 15 of the Agreement, any dispute between the Parties concerning the interpretation or implementation of the Agreement is to be settled amicably through consultation and negotiations between the Parties. Where the dispute has not been settled within one year, from the date upon which such negotiations were requested, it may be submitted to arbitration by either Party. If the disputing parties do not agree on the subject matter of the dispute, the arbitral tribunal shall determine the subject matter. There are specific rules developed under the agreement and it is beyond the scope of this study to consider

[506] See Article 17 of the Agreement.

them in detail suffice to say that the mechanism seems to be designed to foster cooperation as opposed to conflict.

Further, there are many cooperative arrangements in dealing with several aspects of the agreement including water quality and prevention of pollution,[507] flow regimes,[508] droughts and floods,[509] incidents of accidental pollution and other emergency situations,[510] exchange of and access to information,[511] transboundary impacts,[512] capacity building.[513] Most notably is the requirement that whenever an ongoing activity causes or is likely to cause a significant transboundary impact,[514] which will lead the

[507] Article 8 of the Agreement.

[508] Article 9 of the Agreement.

[509] Article 10 of the Agreement.

[510] Article 11 of the Agreement.

[511] Article 12 of the Agreement.

[512] Article 13 of the Agreement.

[513] Article 14 of the Agreement.

[514] According to Article 1 "transboundary impact" means any adverse effect, caused by human conduct, within an area under the jurisdiction of a Party caused by a proposed activity, the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party.

Party to fail to comply with an obligation under the Agreement,[515] the national procedures on the subject should apply and the Parties concerned should endeavour to address the matter through the co-ordination of management plans, programmes or measures.

5.6. Transboundary water equity: A holistic Approach

5.6.1 Commonalities in transboundary water agreements

The case studies above generally show that a transboundary riparian state can be subject to multiple and complicating foreign policy factors that may impact the equitable sharing of international waters. These factors include national image, whereby a state would always want to be seen as behaving in a good way at the international scene but at the same time seeing to it that its ego is not negatively affected. There is also persistent concern about the need to abide with the norms of international law or the basin-wide agreements signed among the states.[516]

In international River Basins there are always perceived and actual inter-linkages between water and politics, water and security and water and human and environmental welfare. Underlining these considerations is the desire of states to cooperate as opposed

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[515] Under Articles 4, 8 or 9 which foster cooperation and reduction of harm to other member states.

[516] In addition the issue of water being one of the many elements of the environment plays a big role.

to conflicting and fostering the concept of reciprocity and mutual understanding. Reciprocity and mutual understanding are however negatively affected by the emphasis on state sovereignty. These factors affect the achievement of transboundary water equity as shall be made more clearly in the critical analysis below.

5.6.2 Revisiting transboundary water equity

The Oxford English Dictionary defines equity as "fairness and impartiality".[517] In terms of actual water laws and policies, 'equity' is often defined ambiguously to maintain political acceptance.[518] Water allocation disputes and decision processes tend to focus upon 'needs' rather than 'rights' because the principle of equitable use is imprecisely defined.[519] Issues of equity apply spatially, in terms of both physical and political boundaries, and temporally in terms of the historical and future dimensions and implications of water development, including seasonality.

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[517] The Oxford English Dictionary, 1994.

[518] Chileshe, P. Trottier, J. and Wilson, L. 2005. 'Translation of water rights and water management in Zambia.' In B. van Koppen, Butterworth JA. and Juma IJ. (Eds). *African Water Laws: Plural Legislative Frameworks for Rural Water Management in Africa.* Proceedings of a workshop held in Johannesburg, South Africa, 26-28 January 2005. International Water Management Institute/IWMI, Pretoria, p.5.

[519] Giordano, M., A., and Wolf, AT. 2001. 'Incorporating Equity into International Water Agreements.' *Social Justice Research.* 14(4), pp.349-366.

The case studies above generally show that equity is often conceived as an economic issue in terms of efficiency, and a political issue in terms of control. Tisdell[520] analyses the dimensions of equity in prevailing water doctrines, concluding that non-priority permit systems (state controlled water allocation) allow for the greatest degree of equity, whereas Shiva[521] concludes that close-knit decentralised systems are more equitable. Syme *et. al.*,[522] correlate equity in water allocation with procedural and distributive justice, noting that equity can be successfully negotiated at both universal and situational levels within specific catchments. Clearly, a multi-scalar approach is necessary if equity is to be a considered factor in water rights allocations among the three riparians sharing the Okavango River Basin.

As noted in Chapters 5 and 4 above, the principle of equitable utilization evolved from early inter-state practices involving watercourses and was part of customary international

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[520] Tisdell, J. G. 2003. 'Equity and Social Justice in Water Doctrines.' *Social Justice Research* 16(4), pp. 401-416.

[521] Shiva, V. 2002. *Water Wars. Privatisation, Pollution, and Profit.* UK: Pluto Press, p.56.

[522] Syme, G. J., Nancarrow, B. E., McCreddin, J. A. 1999. "Defining the components of Fairness in the Allocation of Water to Environmental and Human Use," *Journal of Environmental Management* 57 (11). 51-70.

law. The doctrine is not defined in the legal instruments in which it is used and it is often placed together with the obligation not to cause harm to the other. Sometimes the term 'equitable' and 'reasonable' are juxtaposed without any precision as to their meanings. The Agreements analysed above mention the word equity without giving precise definitions. In fact, the agreements refer to the UN Watercourses Convention. The 1997 UN Watercourses Convention applies the phrase "equitable and reasonable" throughout, without providing an explanation of the difference between the terms. We are left to scholarly definitions and discussions for guidelines regarding their meanings.

From all agreements considered above, it can be safely argued that the language of the agreements is far from clear or explicit. This actually accomplishes nothing in the way of regulating States' discretionary powers to reach agreement on water related issues. [523] The agreements refer to the UN Watercourses Convention or to the SADC Protocol but these international instruments' language of equity provide no practical guidelines for

[523] Hey, E. 1997. 'The International Watercourses Convention – To what extent does it provide a basis for regulating uses of international watercourses?', Unpublished Paper presented at *International Water Seminar, Water Law and Policy Programme*, CEPMLP, University of Dundee, June 11-12, 1997.

water allocation, which is arguably one of the most important components of international water treaties. [524]

The principle has been taken to mean that '[e]ach Basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial use of the waters of an international Drainage Basin.'[525] A 'drainage basin' is defined as 'a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters flowing into a common terminus'.[526]

The above definitions would mean that each State which shares an international watercourse has a right, within its jurisdiction, to a reasonable and equitable share in the beneficial utilization of the waters of that part of a river course which passes through its territory. This right is not absolute as it is restricted by the obligation to act reasonably and not to cause harm to the other riparian State. Further, the above shows that the concept

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[524] Wolf, AT. 'Conflict and Cooperation over International Waterways.' *Water Policy* 1998 (1): 251

[525] see Bogdanovic, S. (Ed). 1999. *International Law Association Rules on International Water Resources,* Belgrade: Yugoslav Association for Water Law, p.206. See also; Article IV of the 1966 Helsinki Rules of the International Law Associations.

[526] Article II of the 1966 Helsinki Rules.

of transboundary water equity is based on the doctrine of limited territorial sovereignty, a compromise solution, which is now widely accepted by States as the basis upon which the substantive rules of the law of international watercourses have evolved.[527]

The language of the agreements subjects them to ongoing debates on the contradiction of doctrines regarding equitable utilisation. The agreements, just like the UN Watercourses Convention, use the phrases 'equitable utilization' and 'no significant harm'. As already noted in Chapters 3 and 4 above, this pragmatic accommodation of 'equitable utilization' and 'no significant harm' does not dearly indicate which concept is to be given priority. McCaffrey, concludes that:

> while it is clear that this paragraph does not entirely solve the problem of which rule take precedence, it at least strongly suggests that if a state's use is equitable it should be allowed to continue, even if it causes significant harm to another state. In the latter event, the reformation suggests that the harming state would be obligated to minimize that harm to the extent possible and to compensate the other state for any unavoidable harm.[528]

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[527] Tanzi, A. and Arcari, M. 2001. *The United Nations Convention on the Law of International Watercourses: A Framework for Sharing.* London: Kluwer Law International, p.14-15.

[528] See McCaffrey, SC. 1996. 'An Assessment of the Work of the International Law Commission.' *Natural Resources Journal,* 1996 36(2):297-318. United Nations,

This clearly shows two competing approaches contending for acceptance by the international community. There was no clear consensus on which principle should take precedence over the other, hence Articles 5 and 7 were both included in the UN Watercourses Convention and the SADC Protocol. The controversies will continue. The principle of equitable utilisation will represent the views of those who subscribe to the concept of limited territorial sovereignty. It mirrors the "principle of the sovereign equality of states."[529] Therefore the standard "does not define equitable utilization by referring to a particular state's activities but, rather, by regarding the use in relation to other states' uses of the same river."[530] In this context, "equitable share" does not mean

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1994. *Report of the International Law Commission on the Work of its Forty-Sixth Session,* U.N. GAOR, 49th Session Supplement. No. 10, U.N. Doc. A/49/10, at 197. see also subsequent publications by Stephen McCaffrey, McCaffrey, SC. 1995. 'The International Law Commission adopts Draft Articles on International Watercourses.' *The American Journal of International Law*. 1995 (89):395-404, pp395, 399.

[529] Tanzi, A. 1997. 'The Completion of the Preparatory Work for the UN Convention on the Law of International Watercourses', in *Natural Resources Forum,* 21 (4), pp. 239 – 245, p.242.

[530] Schroeder-Wildberg E. 2002. *The 1997 International Watercourses Convention – Background and Negotiations.* Working Paper On Management In Environmental

equal division of the waters. Rather, "it means that all relevant factors such as population, geography, pre-existing uses, or the availability of alternative resources have to be considered in each individual case when allocating water rights."[531]

On the other hand the obligation not to cause significant harm – the no harm rule – illuminates the principle of *'sic utere tuo ut alienum non laedas'*[532] but regards the equality of states from the protection-orientated side.[533] In this regard it is very much likely that any argument promoting the rule will concentrate on territorial integrity as opposed to sovereignty. Thus, every state is obliged to take all measures necessary to prevent

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Planning. Berlin: Technical University of Berlin, Institute for Landscape and Environmental Planning, p14.

[531] Ibid. See also Lazerwitz, DJ. 1999. "The Flow of International Water Law: The International Law Commission's Law of the Non-Navigational Uses of International Watercourses." Available at http://www.law.indiana.edu/glsj/vol1/lazer.htm, p.7. Last Accessed 24 August 2010,; Marjon, K. 1997. "The Protection of International Watercourses as Sources of fresh water in the Interest of Future Generations" in Brans EHP, De Haan, EJ, Rinzema J. 1997. *The Scarcity of Water: Emerging Legal and Policy Responses.* London, The Hague, Boston: Kluwer International Publishers, pp80-99, p.83.

[532] Latin term meaning "use your property in a way which does not harm another"

[533] Gleick 1993, *supra*, note 123, p.107; McCaffrey 1993, *supra*, note 117, p.98f.

extraterritorial damage through actions to international watercourses that would harm public health, activities, property or the environment of co-basin states "whatever the level of benefit to other states or to the watercourse generally arising from the use in question might be."[534] Thus, the no-harm rule limits the sovereign freedom of states to exploit their water resources.[535] According to Tanzi, the specification of harm as 'significant' expresses the inclusion of the *de minimis* rule according to which the co-riparians have the duty to overlook insignificant damage.[536]

The fact that there is mere inclusion of the term 'equitable' or 'equitable utilization' and 'no significant harm' in an agreement does not necessarily mean that the agreement in which the term exists is an 'equitable agreement' and further, the inclusion does not entail that there will be mutuality in the allocation of waters in the respective basin. On the corollary, an equitable agreement does not necessarily have to incorporate equitable language in it. On an irrefutable and conclusive note, the fact that an agreement incorporates the terms such as 'equitable' does not mean that there was, is or will be equitable allocation of water resources in the concerned Basin.

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[534] Fitzmaurice, 1995, *supra,* note 117, p.368.

[535] Arcari, 1997, *supra*, note 276, p.173.

[536] Schroeder-Wildberg, 2002, *supra*, note 288 p.15. see also Tanzi 1997, *supra*, note 197, p.115.

5.6.3 Treaty formation, sovereignty and cooperative interaction

Equity as considered above shows that the persistence of water conflicts in many river basins is not simply a matter of water shortages, but rather the lack of equitable mechanisms that can adequately govern the allocation water resources to mitigate the adverse impacts of hostility and resentment. As such, equity is at the heart of many trans-boundary water disputes[537] – those considered above and many others the world over.

Further, the hydro politics involved in the basins considered above, the example of South Africa in the Incomati River Basin and Zimbabwe in the Zambezi River Basin shows that these states have a greater sway over the sharing of the water resources in the concerned basins. These greater sways are mainly due to self-interest and the need to get maximum benefit of the water resources concerned. The major factor underlining the need for maximum benefit at the expense of the others is territorial sovereignty where the neighbouring country has very little say about the activities in another state.

There has been growing literature in regards to how sovereignty affects treaty formation and implementation of water agreements. Some authors have talked about the concept of

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[537] Abukhater, A.B. 2010. "Equity in the Context of Bilateral, International Water Allocation Treaties in Arid Regions: An Interdisciplinary, Transformative Approach to Conflict Resolution," Unpublished PhD Thesis. Graduate School of the University of Texas at Austin.

limited territorial sovereignty. As shown in Chapter 2 above, within the context of international watercourses, limited territorial sovereignty means that watercourse States enjoy equal rights to the utilisation of an international watercourse, and each Watercourse State must respect the correlative rights of other watercourse states. In this light, the doctrine of limited territorial sovereignty provides the theoretical basis for the main substantive rule of the law of international watercourses that of equitable and reasonable use.[538] As Schwebel[539] writes, the rule of equitable and reasonable use is well recognised as part of customary international law, as evidenced by international agreements, non-binding instruments, decisions of courts and tribunals, and in the writings of publicists.

Generally the states in the basins considered above are cooperating or at least show commitment to cooperate through the various binding agreements they negotiated and because of the effect of sovereignty on treaty for states, implementation and enforcement and cooperation in general, cooperative arrangements need to be "individually rational."[540] The idea of individual rationality presumes that states decide independently whether to participate in international agreements with the ultimate aim of achieving maximum payoffs. Further it means that

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[538] Ibid.

[539] Schwebel, 1980, *supra* note 268.

[540] Dinar, S. 2005. International Water Treaties. Negotiation and Cooperation along Transboundary rivers. Routeledge. London and New York.

> (1) no party to a treaty can gain by withdrawing, given the choices, made by other states and
>
> (2) no party may gain by failing to comply, given the treaty's design.[541] "Collective rationality" on the other hand, presumes that cooperating states maximise their collective payoff.

That is, states will gain collectively by changing their treaty. In this regard we see that the basin states considered above largely have both the rationalities.[542]

As Chapter 3 has highlighted, conflict and cooperation are not just on a continuum progressing from irrational individualistic conflict to rational collective cooperation. This means that the existence of a transboundary water agreement does not mean that there is conflict. Although an agreement can be regarded as a benchmark for cooperation, the process of implementing or enforcing it can induce conflictive interactions. While there has been practically no evidence offered of a causal link between water and armed conflict, the real benefits of inter-state cooperation over water issues tend to be over-emphasised. In other river basins such as those along the west bank of the Jordan River,

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[541] *Ibid.*

[542] *Ibid.*

there is ample evidence of both cooperation and conflict occurring simultaneously—an apparent contradiction referred to as the conflict versus cooperation paradox.[543]

Generally, when it comes to cooperation, it appears from the agreements analysed above that the states involved hold constructive perceptions about the way water resources in the basin will be allocated or utilised. The states seem also to be mindful of the importance of preserving peaceful and cooperative relationships with the other side and the high cost of conflict. If one looks at the Incomati River basin it is clear that there was indeed conflict which was underlined by political strife in the concerned region.

In the Zambezi River basin there was mutual suspicion and SADC had to be involved in the negotiation of the current agreement. In all the basins considered above, the states believed that brokering the treaty was a great success on their part. As such, moving from a stage of rivalry to a more cooperative stage through diplomacy is valued by the makers of the treaty as a strategic move worthy of attaining and maintaining at any cost to prevent chances for any clash between the two countries in the future.[544] To them, the treaty set

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[543] Zeitoun, M. 2007. 'The Conflict vs. Cooperation Paradox: Fighting Over or Sharing of Palestinian-Israeli Groundwater?' *Water International,* 200732 (1):105-120.

[544] Abukhater, 2010. *Supra,* note 267.

an example of the role of preventive "hydro-diplomacy," which is very important in resolving conflicts through negotiation.[545]

5.6.4 Cultural hydrology and national development

States work out ways of ensuring lack of conflict in the utilization of water resources hence agreements in that regard. The unease between Zimbabwe and Zambia regarding benefits from the Kariba Dam is one indicator of that where Zimbabwe needs to support its big agricultural industry and Zambia has no big agricultural projects in the basin. Lesotho's highlands water project is another indicator of a potential conflict area thanks to the agreement between South Africa and Lesotho.

The Lesotho Highlands Water Project shows that while essential human needs are for the most part comparable within the same geographic and climatic contexts resulting in relatively comparable water consumption trends, economic development water needs are highly variant depending on the degree of social and economic development of each nation. Considering all the case studies covered above, conflict over water allocation,

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[545] Ibid, see also generally Biswas, AK. 1994. *International Waters of the Middle East: From Euphrates-Tigris to Nile*. Oxford University Press; Wolf, A.T. 2007. Shared Waters: Conflict and Cooperation. *Annual Review of Environment and Resources*, 32, pp.241-269; and Priscoli, JD. and Wolf, AT. 2009. *Managing and Transforming Water Conflicts*. Cambridge University Press.

however, is not confined to water allocation for economic development. Rather, conflict and disagreements over water often arises over essential human water needs.[546] This troubling side of water conflicts raises a vexing question of water access, which is a by-product of power structure imbalance, rather than needs *per se.* As such, it is imperative to understand the dynamics of power structure and regional hydro hegemony and the historical and existing water uses in the basin. This has been well covered above in the considerations of the various river basins.

The Orange River Basin presents a number of lessons in regards to the research questions. In this basin South Africa, Namibia, Botswana and Lesotho share access to the Orange River, which is of great economic significance to all four co-riparian states. Namibia and South Africa are much more dependent on this river for their developmental prospects. In particular, the degree to which Namibia and South Africa achieve their future economic development goals is primarily contingent upon the degree to which they utilize the available water resources of the river. While Lesotho receives royalty payments from South Africa for water exports via the LHWP, Botswana has a stake in keeping this option of acquiring water through the LHWP alive in the future.[547] For Botswana, the river

[546] Abukhater, AB. 2010. *Supra*, note 267.

[547] Earle, *et al.,* 2005.

provides strategic leverage to foster its position in other river basins of greater importance.[548]

The Lesotho's Water Transfer Treaty with the Republic of South Africa is another aspect to consider. South Africa, the biggest economy in the SADC Region is generally under water stress but Lesotho one of the smallest economies wholly enclosed by South Africa, has so much water – a water abundant country. However, Lesotho does not have much capital to kick-start projects which can propel the country to greater developmental levels. This was a win-win situation as South Africa had to rescue the Vaal Region from water scarcity and Lesotho would be able to provide power to its burgeoning industries. These shortcomings and strengths made the two states to negotiate a water transfer agreement which resulted in a win-win situation as has been shown above. In fact, the parties gained economies of scale by using flexible language to resolve controversial issues, establishing various neutral institutions to police the treaty, and integrating benefits under the treaty with existing arrangements between them.

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[548] Abukhater, AB. 2010. *Supra,* pp.248-249. See also Turton, A. 2003. 'An overview of the hydropolitical dynamics of the orange river basin," *in Nakayama, Mikiyasu (ed), International Waters in Southern Africa*, pp. 136-163.

5.6.5 Cooperation and Conflict Dynamics

The case studies covered above show that states usually cooperate when it is in their interest. The Incomati River basin happenings are reminiscent of this aspect. Further, it can be argued especially in the context of the Orange River Basin that scarcity causes states to negotiate an agreement and the LHWP is a good example. Furthermore, the Zambezi River Basin evidences that often state cooperation is often sought when they fail to unilaterally solve distribution problems and see cooperation and negotiation of a common agreement as a way forward in regards to transboundary water equity.

Further, all the case studies above have shown that states normally negotiate a treaty to avoid conflict over the utilisation of water resources and also to ensure benefit sharing or allocation of water resources. In this light the concept of transboundary water equity is always at the background in the negotiation process with the outcome being a negotiated agreement incorporating equitable principles. So it is not correct that one factor be it social economic legal or political drives treaty negotiation. Treaty negotiation incorporates a lot of factors. However, this does not imply that inclusion of equitable language in transboundary water management and allocation agreements makes a practical difference in transboundary water law at the basin level with specific reference. The same applies to the Kavango River Basin as has been said in the previous chapters and as will be concluded in Chapter 8 below.

In addition, the case studies show that law, politics and economics play an important role in treaty formation and the implementation and enforcement thereof. Legal principles regulating state behaviour are incorporated in water agreements. Politics determine approval or disapproval of national projects and diplomatic relations between the concerned states and economics helps in weighing costs, benefits or payoffs and trade-offs. A combination of all the factors means the possibility of implementation, the enforceability and equitability of water resource management and utilisation.

According to some authors as shown in Chapter 3, economic efficiency alone is not a sufficient condition for cooperation, especially when it is related to the transfer of a scarce resource, such as water, among hostile potential co-operators.[549] Therefore, political considerations should be incorporated into the analysis as well. The sharing of the Nile River can be taken as an example of the development of a framework for analysing

[549] See Dinar, A. and Wolf, A. 1994a. 'International Markets for Water and the Potential for Regional Cooperation: Economic and Political Perspectives in the Western Middle East.' *Economic Development and Cultural Change*, 43(1):43-66. Dinar, A. and A. Wolf, 1994b. 'Economic Potential and Political Considerations of Regional Water Trade: The Western Middle East Example.' *Resources and Energy Economics*. 16:335-356,. Dinar, A. and Wolf, A. 1997. 'Economic and Political Considerations in Regional Cooperation Models.' *Agricultural and Resource Economics Review*. 1997 26(1):7-22.

economic and political aspects of cooperation and demonstrate, how regional cooperative arrangements based only on economic considerations are inferior to arrangements that take into account also political considerations.[550] Specific recommendations about the content of water agreements are contained in the concluding Chapter 8 below.

There is a general conceptual framework developed to handle international river cooperation, taking into account hydrologic, economic, and political aspects.[551] This conceptual framework identifies three sets of factors, each containing several variables that establish general patterns of incentives and disincentives for cooperation. The details of the framework are not relevant to this legal analysis or they are basically regarding an economic theory hence the multidimensional demands to the analysis of issues relating to transboundary water equity as mentioned in Chapter 1 above.

However, in the context of this research the three sets are the Hydrologic-Economic relations among the states, the Foreign Policy of each state, and each potential state's Domestic Policy and Consensus.[552] The Hydrologic-Economic set can be viewed as a

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[550] Dinar, A. and Wolf, A. 1994a , *supra*, note 549. Dinar, A. and Wolf, A. 1994b, *supra* and Dinar, A. and Wolf, A. 1997 *supra* note 549.

[551] See LeMarquand, D. 1977. *International Rivers: The Politics of Cooperation*. Westwater Research Center, University of British Columbia, Vancouver, BC, p.47.

[552] *Ibid.*

necessary condition for cooperation. Then foreign policy, which is affected by domestic policy and consensus, may decay or enhance this cooperation.[553] Some authors have criticised this saying that the framework does not include an important set of factors: the power of a state to prevent the establishment of other coalitions. Another potential drawback of this approach is its lack of quantitative measurements for the various factor sets and variables used.[554]

5.6.6 Reflections on the Regime Theory

As noted above, a regime consists of implicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations. The case studies above may help in answering the question regarding how, Regime Theory can build understanding of interstate water co-operation in the context of the Okavango River Basin and whether based on this understanding, a typology or model for the Okavango River Basin can be constructed.

In the context of this research question, the case studies above evidence that riparian countries are likely to overcome upstream-downstream asymmetries and engage in efficient co-operation when an agreement providing for transboundary water equity exists. States cooperate and solve problems in the process of cooperation. Such problems

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[553] *Ibid.*

[554] *Ibid.*

relate to water resource utilisation and management and are easier to solve when riparian countries are more integrated i.e., when the density of political, economic, and societal ties among countries is greater – and an agreement providing for equitable allocation may be one of the best tools to foster this.

In connection with the above point, some authors[555] have voiced that efficient co-operation is more likely in more integrated settings because:

a) compensation of upstream countries, which is needed to motivate the latter to co-operate, is easier;
b) integrated settings enable riparian countries to make more credible commitments to one another because they interact in a larger number of policy areas;
c) information is likely to be more complete and evenly distributed;
d) notions of equity or justice are more likely to be congruent;

[555] See Bernauer, T. 2002. "Transboundary Freshwater Management: When and Why Does It Succeed or Fail?" in, Castelein S. 2002. (Ed). *Proceedings of an International Conference: From Conflict to Co-operation in International Water Resources Management: Challenges and Opportunities, 20-22 November 2002*. UNESCO-IHE Institute for Water Education Delft, The Netherlands pp.431 – 448.

e) unequal bargaining leverage is mitigated by transboundary institutions, which also provide for more clearly defined, transferable property rights and lower transaction costs; and
f) opportunities for non-governmental (including private) players to influence outcomes are greater.[556]

The happenings in the various river basis considered above show a combination of these factors hence the Regime Theory can increase understanding of interstate water co-operation based on the understanding of the factors mentioned above including what the Regime Theory entails and the dynamics at play. As explained in the introductory parts of this chapter, a typology or model for the Okavango River Basin can be constructed. Details are in Chapter 8 below and Annexure A and B attached.

Commissions in the context of the above point are seen as 'shock absorbers' which function to reconcile conflicting interests. More generally, looking at all case studies provided above, institutional structures for reconciling conflicting interests vary at basin level but are similar in generic outlook and at the international level they tend to be less sophisticated and less resilient to opportunistic manipulation than their counterparts at the domestic level. As a reflection on the recommendations in Chapter 8 below, at the international level, solutions thus have to be found through consensus-oriented

[556] *Ibid.*

negotiations among riparian countries under conditions that, in many parts of the world, resemble what theorists who are proponents of Realism in international politics have called an anarchical self-help system.[557]

Indeed, the indivisibility and number of international watercourses means that many States have no choice but to cooperate with each other to meet their water requirements. Increased pressure on water, coupled with its importance in the social and economic development of a State provides a strong incentive for States to reconcile their competing interests over international watercourses. This requires the application of the principles of transboundary water equity. A review of the scope of responsibilities of Commissions and Joint Bodies or Commissions in Southern Africa or at least in the river basins considered above suggests that there is limited institutional experience that can be drawn upon as far as transboundary water equity is concerned. Some guidance may be inferred from a series of conventions relating to the use of shared natural resources which this chapter has considered in a comparative manner.

Additionally, the agreements analysed above show that there has been a lot of hydrological interdependency. Countries are heavily dependent on each other with regards to water infrastructure development, water transfers and general management of transboundary river basins. This drives towards equitability of water utilisation and

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557 Waltz, 1979, *supra* note 251.

sustainable basin development. In this light water is being seen as an instrument for cooperation as opposed to conflict. The existence of an agreement with the principles and procedures for water management and utilisation is indicative of some propensity towards water cooperation in southern Africa.

The transnational nature of the river basins considered above, not excluding the Okavango River Basin, make states see the need for coordinated activities in their basins. In order to coordinate activities, there comes up the need for the development of a legal framework in the form of a water agreement containing the institutional and regulatory framework. The development of this cooperative regime as the case studies above show, demonstrates the fact that the previously conflictive Incomati River Basin and the potentially highly conflictive Zambezi River Basin was encouraged by the fact that states saw potential and actual benefits of cooperating as measured against the losses attached to conflict. Powerful and big economies such as South Africa, Zimbabwe and Botswana saw the need to cooperate with smaller economies so that there was harmony among them. The above explains why some authors have said the following:

> International regimes are useful to governments. Far from being threats to governments (in which case it would be hard to understand why they exist at all), they permit governments to attain objectives that would otherwise be unattainable. They do so in part by facilitating intergovernmental agreements. Regimes facilitate agreements by raising the anticipated costs of violating others' property rights, by altering transaction costs through

> the clustering of issues, and by providing reliable information to members. Regimes are relatively efficient institutions, compared with the alternative of having a myriad of unrelated agreements, since their principles, rules, and institutions create linkages among issues that give actors incentives to reach mutually beneficial agreements. They thrive in situations where states have common as well as conflicting interests.[558]

In light of the foregoing, it can be said that interstate cooperation in a river basin may increase water security. In this context, the Regime Theory can build understanding interstate water co-operation in the context of the Okavango River Basin and based on this understanding a typology or model for the Okavango River Basin can be constructed as Chapter 8 below endeavours to achieve. This is further amplified by the fact that when a convergence of values has occurred within a regime and the co-operation has been institutionalised, it is harder than one might think to reverse or end this co-operation.

It is notable that the Regime Theory just like any other theory, it has its limitations. These limitations, however, do not water down the conclusion set above. On this backdrop, it is

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[558] See Mayer, P., Rittberger, V. and Zürn, M. 1993. "Regime Theory – State of the Art and Perspectives," in Rittberger, V. (ed.) *Regime Theory and International Relations, Oxford, Clarendon Press*, pp. 391-430, p. 393). Keohane, R. 1984. *After Hegemony*. Princeton University Press, New Jersey, p. 97.

safe to argue that according to functionalist thinking, co-operation over water could be a precursor to co-operation in other, more contentious, areas.[559] This is evidenced in the Incomati River Basin where the ideological differences between South Africa and Mozambique at the time made cooperation difficult to achieve with states embarking on unilateral water infrastructural developments. One can still object to this functionalist thinking by arguing that the Functionalist Regime Theory is somewhat blind to the fact that water may be subordinated to much more important areas of dispute among the concerned states.[560] This means that now one has to consider the hierarchy of issues involved in the dispute among or between conflicting states.[561]

A realist objection to the focus on water experts would be that the interests of the powerful make regimes come about.[562] Therefore, cooperation among states in Southern Africa, which were all under colonial rule at some point in time, may be because of factors

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[559] See Asmal, 2000, *supra,* note 167.

[560] Allan, 2001, *supra*, note 210.

[561] Jägerskog, A. 2003. *Why States Cooperate Over Shared Water: The Water Negotiations in the Jordan River Basin*. Linköping, Sweden: Linköping University.

[562] Jägerskog, A. 2002. "Contributions of Regime Theory in Understanding Interstate Water Cooperation: Lessons Learned in the Jordan River Rasin," in Turton, A. & Henwood, R., eds., *Hydropolitics in the Developing World – A Southern African Perspective.* African Water Issues Research Unit: Pretoria, p.73

outside the region but beyond, or may be because of the historical background. To this end, some authors have noted that the Regime Theory concentrates too much on action and behaviour and thereby misses the wider social and historical process.[563] Thus, it is agreeable that the Regime Theory is not seen as an all-encompassing one but rather, as a theory that offers insights into the institutional aspects of the water co -operation in the river basins. Therefore, although the theory helps in the understanding of transboundary water equity, it is not sufficient. The understanding obtained from this theory, therefore, will be supplemented by observations from elsewhere which have also helped in understanding the conflict and cooperation dynamics of the Okavango River Basin.

As a connection to the next chapter and the recommendations which will be made on the aspects covered by this chapter, it is noteworthy that there are two competing predictions to be kept in mind with respect to the regime theory. In integrated settings, one might expect international river commissions to lose importance relative to private players.

As some authors[564] have cautioned, one might also expect, however, that they could gain importance; states in a water regime may be more willing to establish, fund, and entrust

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[563] Kütting, G. 2000. *Environment, Society and International Relations – Towards more effective International Agreements*. Routledge, London and New York. pp- 19-22.

[564] Ibid see also Jägerskog, 2003, *supra* and Orange-Senqu River Commission (ORASECOM). 2007. *Legislation and Legal Issues Surrounding the Orange River*

such commissions with more substantive tasks because they have already lost their monopoly on transboundary information flows and negotiations, while countries in non-integrated settings have yet to lose that monopoly and are thus more likely to resist a transfer of authority. In this light, a properly constructed drafted agreement with clear provisions on the aspect of transboundary water equity in a water regime will help states achieve equity, avoid conflict over water resources and encourage more cooperative interaction. Chapter 8 below elaborates on more of similar recommendations.

5.7 Summary

This shapter has covered some oof the comperative river basins within the SADC region. These river basns have been chosen carefully as they all fall underrt the regulative framework of the SADC Water Convnvention and its protocol. It is clear that these river basins are modelled along other river basins across the worls where the principles of equitable water allocations and usdage are ingrained in the principles the written agreemets embody. It is inthis context tht the models folled in the Zambezi Rier Basin, the Orange-Senqu river basin and the Incomati river basin were well explained. The

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Catchment. WRP Consulting Engineers, Jeffares and Green, Sechaba Consulting, WCE Pty Ltd, Water Surveys Botswana (Pty) Ltd, p.33; Zawahri, N. 2008b. 'Designing River Commissions to Implement Treaties and Manage Water Disputes: The story of the Joint Water Committee and Permanent Indus Commission.' *Water International*. 2008 (33): 464–474.

elucidation of the peinciples therein have been done on sub-headings which a re similarly or identically worded to ensure consistency in the thematic areas covered.

The analyses done in this chapter has shown that conflict and/or cooperation in the management of these rivers leads to an informed worldview of how river basins are managed across the world. It is cler that whether there is movement from potential conflict to cooperation potential or it is *vise versa* is a matter of deciphering the geography and hydrological factors at play. Human factors are also a huge contribution to the potential for conflict or a trend towards cooperation. The case studies considred evidence that often state cooperation is often sought when they fail to unilaterally solve distribution problems and see cooperation and negotiation of a common agreement as a way forward in regards to transboundary water equity.

In addition, the case studies above generally show that a transboundary riparian state can be subject to multiple and complicating foreign policy factors that may impact the equitable sharing of international waters. These factors include national image, whereby a state would always want to be seen as behaving in a good way at the international scene but at the same time seeing to it that its ego is not negatively affected. There is also persistent concern about the need to abide with the norms of international law or the basin-wide agreements signed among the states. In all, the case studies above generally show that equity is often conceived as an economic issue in terms of efficiency, and a political issue in terms of control.

Chapter 6

Beyond Transboundary Water Law: International Water Relations in the Okavango River Basin

6.1 Introduction

Transboundary water law as embodied in the 1997 UN Watercourses Convention has been characterised by the politics among states - international relations. The OKACOM Agreement dealt with in detail below is reminiscent of this as well. This is hardly surprising because water is an element of the environment and the rise of environmentalism gave rise to new thinking about international relations. However, it is not easy to write about the environment and international relations in one piece, let alone writing about water issues at basin level in the context of international relations bringing out the label 'international water relations'.

This chapter falls into this rather difficult field. Chapter 1 above put it succinctly in the first paragraphs that while new technological innovations have been used in a bid to meet the growing demand for water resources such innovations also have the impact of increasing the need for water for production, thus creating new negative effects for the environment and humans. Indeed, at the centre of this growing demand is how nations relate to each other in the management of transboundary water resources be they underground or surface waters. No doubt, the interaction of states in the management of

transboundary water resources brings about international water relations. This chapter deals with this specific aspect and makes sense of the interaction between Angola, Botswana and Namibia in so far as the utilisation of water resources in the Okavango River Basin is concerned.

In the context of the above, the chapter describes and analyses the thrust of the hydro politics among Okavango River Basin states. To achieve this, the chapter traces the major water events as they happened among the three mentioned riparians. The political underpinnings are decoded and analysed to come to the point of understanding the behaviours of the riparians. This understanding helps in answering the broader research question regarding conflict and cooperation dynamics in the Okavango River Basin.

The foregoing reflects on the findings in Chapter 7 below, but without dealing with the content of the OKACOM Agreement, this chapter analyses the hydro politics of mutual suspicion, unilateralism and mistrust in the basin and how these foster or torpedo equitable utilisation of Okavango River Basin resources. It begins with theoretical points; setting the discourse of international water relations and moves into the specific and major water events in the Basin. It then interprets them through the lens of international water relations, giving answers to the relevant research questions and wraps up with a conclusion that sums up the major discussions in the whole chapter and makes reflections on the next chapters.

6.2. Historical antecedents to the Hydro politics of the Okavango River Basin

The literature review above has set the ground for an understanding of what hydro politics is.[565] The concept of hydro politics has been developed or used by many authors in international relations and international law which subjects are in any case connected or interrelated. Below is an analysis which borders on this relationship and interlinkage. The central theme is to move from a purely legal discourse to a more politically-oriented analysis which does not ignore the law in any case. Before that some background to the hydro politics of the Basin will be contextualised. All this will help in explaining how the

[565] See among others cited in chapter 2; Elhance, A. 1999. *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins.* Washington, DC: US Institute of Peace Press; Wolf, A. 1995. *Hydropolitics along the Jordan River.* Tokyo: United Nations University Press; Medzini, A. and A. Wolf. 2004. 'Towards a Middle East at Peace: Hidden Issues in Arab-Israeli Hydropolitics.' *International Journal of Water Resources Development*. 2004 20(2):193-204, Daoudy, M. 2008. 'Hydro-Hegemony and International Water Law: Laying Claims to Water Rights.' *Water Policy*. 2008 10(S2):89–102. And also Howell, P P. and Allan, J. A., 1990. *The Nile: sharing a scarce resource*. London: School of Oriental and African Studies. *Waterbury, J. 2002. The Nile Basin: National Determinants of Collective Action. New Haven,* CT: Yale University Press. Whittington, D., Wu, X., and Sadoff, C. 2005. 'Water Resources Management in the Nile Basin: The Economic Value of Cooperation.' *Water Policy,* 2005 (7):227–252.

Regime Theory can help in explaining transboundary water equity in the Okavango River Basin.

6.2.1 Background to the Hydro politics of the Okavango River Basin

There are political and security issues in water resource management and utilisation. Water has been used as a political and national security issue by many nations across the globe.[566] Southern Africa houses some of the most arid countries in Africa and among them are Namibia and Botswana, yet at the same time they are having growing strong and stable economies and water has been one of the central issues to economic prosperity of the countries hence it is a socio-economic, security and political issue. [567] One can,

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[566] See arguments expressed in Mollinga, PP. 2001. 'Water and Politics: Levels Rational Choice and South Indian Canal Irrigation'. *Futures,* 2001 33 (8/9): 733 -757.

[567] See discussions in Ashton, PJ. 2000. 'Southern African Water Conflicts: Are They Inevitable or Preventable?,' in Green Cross International. 2000, *Water for peace in the Middle East and Southern Africa*. Green Cross International, Geneva; pp.94-98, Ashton, 2000.' Potential Environmental Impacts of the Associated with the Proposed Abstraction of Water from the Okavango River in Namibia.' *African Journal of Aquatic Science*. 2000 (25):175 – 182; Ashton, PJ. 2003. "The Search for an Equitable Basis for Sharing Water in the Okavango River Basin", in Nakayama, M. (Ed). 2003. *International Waters in Southern Africa.* Tokyo and New York: United Nations University Press, pp 31 – 63; Ashton, PJ and Neal MJ. 2003. 'An Overview

therefore, assume how water can be a political as well as a security issue between these two countries.

Some might be taken aback when reading that indeed water is politics but it must be considered for clarity that saying water is politics is a strategic speech act.[568] Therefore, whether water is politics may depend on how one defines politics, that is something for political scientists and most water law and water politics writers have not engaged political science literature so much on this when writing about state interaction in regards to water issues especially transboundary water law. Mollinga[569] even talks about the 'political sociology of water' and this term has never attracted responses from political scientists or experts of international relations studies. Thus Warner and Wegerich blame

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of Key Strategic Issues in the Okavango River Basin,' in Turton, A.R. Ashton, P.J and Cloete, T.E. (Eds). 2003. *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin,* AWIRU and Green Cross International, Pretoria, Geneva, pp31 -63.

[568] Warner, J. and Wegerich, K. 2010. 'Is Water Politics? Towards International Water Relations.' In Wegerich, K. and Warner, J. 2010. *The Politics of Water: A Survey.* First Edition. Rutledge. London and New York, pp3 – 17. See also Austin, J.L. 1962. *How to do Things with Words: The William James Lectures Delivered at Harvard University in 1955.* Oxford: Clarendon.

[569] Mollinga, PP. 2001, *supra* note 566.

political scientists partly for this saying that political science has been an inward looking discipline.[570] Thus Werner and Zeitoun say:

> The few studies conducted on international water relations tend to be written by geographers, civil engineers and experts of law, paying cursory attention at best to established IR [International Relations] theory or political science frameworks.[571]

The politics related to water have been branded 'hydro politics.' However, as already highlighted in Chapter 3 above, the literature reviewed shows that there are competing definitions of the term 'hydro politics'. According to Turton[572] hydro politics is 'the authoritative allocation of values with respect to water in society' and according to

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[570] Warner, J. and Wegerich, K. 2010, *supra.* See also Buzan, B. and Little, R. 2001. "Why International Relations have failed Intellectual project and what to do about it?" *Millennium Journal of International Studies.* 2001 30 (1):19-39.

[571] Werner, J. and Zeitoun, M. 2008. 'International Relations and Water Do Mix: Hydro-Hegemony and International Relations' *Political Geography*, 2008 (27):802-810, at p.802

[572] Turton, A. 2002. 'Hydropolitics: The Concept and its limitations.' in Turton, A. and R. Henwood (eds.), *Hydropolitics in the Developing World: A Southern African Perspective*. Pretoria: Centre for Political International Studies, University of Pretoria, pp13 -19, at p.16.

Mollinga[573] hydro politics is the contestation of water resource planning and use. In this regard the authors are not necessarily contradicting each other because as it appears, Mollinga deals with process while Turton deals with the outcome. Thus, both definitions are valid in so far as this research is concerned. Turton, however, attributes politics in internationally shared watercourses to scarcity, in other words, hydro politics is caused by water scarcity.[574] This assertion is refuted in this Chapter and the causes of hydro politics will be decoded.

6.2.2 The Okavango River Basin as a regional security risk concern

International watercourses are often shrouded with security concerns and this in turn often creates situations of secrecy, and politicking about what happens in the concerned watercourse; The Okavango River is not an exception as it is an international watercourse. Article 2(a) of the 1997 Convention on the Law of Non-Navigational Uses of International Watercourses, defines 'watercourse' as "a system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus" and it may have components.[575]

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[573] Mollinga, PP. 2001, *supra*, note 566, p.735.

[574] Turton, A. 2002, *supra*, note 174, p.13.

[575] Components of a watercourse include rivers, lakes, aquifers, glaciers, reservoirs and canals. The ILC notes that, "so long as these components are interrelated with one

Transboundary Rivers form part of the security complex that affects the countries involved and sometimes even global security such as the Jordan and the Tigris-Euphrates Rivers whose security issues call for international attention. Although water is not necessarily the mainstay of security concerns in the region, simmering tensions indicate that water has been used for security strategic positioning and thus has been politicised to a great extent. For example, the case of Kasikili/Sedudu Island[576] which sparked a dispute between Namibia and Botswana in the 90s did not put water at the fore for it was mainly a sovereignty and border issue but water was an integral part of the dispute.[577]

The International Court of Justice even applied equity principles in deciding the case.[578] Such principles which have already been highlighted in the previous chapters form part of the applicable principles to transboundary water equity herein discussed. Further, the

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another, they form part of the watercourse. International Law Commission 2003, *supra*, note 105, p.90.

[576] See the Case Concerning Kasikili/ Sedudu Island (*Botswana v Namibia*), December 13, 1999, *reprinted in* 39 I.L.M. 310 (2000).

[577] *Ibid.*

[578] *Ibid*.

projects that have been proposed and opposed in the Okavango River Basin also illustrate the security complex among the three riparians.[579]

A transboundary watercourse is characterised as a security complex in that where a river straddles across two or more countries, there is always hydrological interdependence which inevitably creates interaction between or among the riparians. As the case studies below will show, a project in one country may affect the welfare of the other country. That is where the politics start and security concerns may be fundamental in resolving the issue. Therefore, as Warner and Meissner put it:

> Any water project redistributes (in)security. Changes resulting from developmental interventions may unduly expose some domestic or foreign groups to hazard and exclude actors from security benefits. Rather than concentrate upon the function of undifferentiated nation state, we need to reflect as much as possible on all the groups who gain or lose.[580]

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[579] *Ibid*. see similar remarks in Yoffe, S. 2001. *Basins at Risk: Conflict and Cooperation over International Freshwater recourses.* Oregon State University, Ph.D. Dissertation.

[580] Jaroen, FW and Meissner, R. 2008. 'The Politics of Security in the Okavango River Basin: From Civil War to Saving Wetlands (1975 – 2002) – A preliminary security Assessment,' in Pachova NI, Nakayama, M. and Jansky, L. 2008. *International Water*

According to these authors, in order to measure the security threat which provokes the hydro politics, it is important to consider the prior position of the countries involved and measure it against the position which the proposed project would put them, should it be implemented. In this discourse a project which creates a change in the security positions creates insecurity and will likely face resistance as shall be shown through case study analyses below. This resistance happens because insecurity is intuitively bad, thus the security discourse is inherently conservative wanting to maintain a certain *status quo*. This point will become clearer in considering how Botswana has managed to use the Delta as a security strategic tool to torpedo water infrastructural developments proposed especially by Namibia.

It will be clear through the water events considered below that the projects which Namibia wanted to undertake were opposed by Botswana because Botswana felt insecure about its Delta and the future of tourism, hence its economy. With it being inherently conservative, as shown by some media reports,[581] Botswana is seen to want to maintain a certain *status*

Security: Domestic Treats and Opportunities. United Nations University press. Tokyo, pp252- 295, at p.254.

[581] See *Ngami Times*, 2003. 'Stop Rape of Delta' Volume 5. Number 154. 24 – 31 January 2003. *Ngami Times*, 2003. 'Okavango Project Sheer Madness' Volume 5, Number 159, 28 February – 7 March 2003.

quo that the river should be left as it is for the Delta to survive. This discourse or rather interaction underlines the whole hydro politics of the Okavango River Basin.

6.2.3 Relations among riparian's

The three riparians have had both cooperative and conflictive relations in various historical circumstances. Angola and Namibia have had historical tensions arising from the Angolan civil war. The war in Angola was not only a national security concern to Namibia; it had a history behind it for the ruling SWAPO has historical links with the *Movimento Popular de Libertação de Angola* (MPLA) (Popular Movement for the Liberation of Angola). They fought together against the same opponent *União Nacional para a Independência Total de Angola* (UNITA) (National Union for the Total Independence of Angola) before Namibia gained independence.[582] The fighting in Angola is somewhat an unfinished business for the ruling South Western People's Organisation (SWAPO) Party of Namibia because the peace which Angola is enjoying right now is

[582] See Hamutenya, H. 2014. Namibia and Angola: Analysis of a symbiotic relationship', in Bosl, A. 2014. *Namibia's Foreign Relations Historic contexts, current dimensions, and perspectives for the 21st Century*. Konrad Adenauer Foundation, Windhoek, see also Bosl, A. 2014. ' Namibia's foreign relations in a changing world – An appraisal', in Bosl, A. 2014. *Namibia's Foreign Relations Historic contexts, current dimensions, and perspectives for the 21st Century*. Konrad Adenauer Foundation, Windhoek, p.20.

seen to be fragile though in the past decade the mutual suspicion seems to have been eliminated by stronger diplomatic and economic ties.[583]

The relations between Namibia and Angola actually led to a situation whereby there was no development at all along the river especially that section of the river that forms the border between the two countries. Contrary to the events in the Cunene River which forms the border between the two countries on the western side, the Okavango remained virtually underdeveloped contributing to the near pristine condition of the river.[584]

Further, the Okavango River was a focal point for the two countries because there is a lot of fighting that happened along the river between Namibian military and UNITA soldiers.[585] In fact, most of the catchment area of Okavango in Angola fell under UNITA

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[583] Bosl, A. 2014. ' Namibia's foreign relations in a changing world – An appraisal', in Bosl, A. 2014. *Namibia's Foreign Relations Historic contexts, current dimensions, and perspectives for the 21st Century*. Konrad Adenauer Foundation, Windhoek, p.20.

[584] Ibid.

[585] See Generally, Hamutenya, H. 2014. Namibia and Angola: Analysis of a symbiotic relationship', in Bosl, A. 2014. *Namibia's Foreign Relations Historic contexts, current dimensions, and perspectives for the 21st Century*. Konrad Adenauer Foundation, Windhoek

control during the Angolan civil war and there was massive displacement of people with most people fleeing to urban Angola or crossing over to Namibia as refugees. This displacement is very relevant to this research as it has a bearing on future plans of Angola on the water resources of the Okavango River.[586]

The involvement of Namibia in Angola was not just a security concern to Namibia but was also a strategic one where Namibia safeguarded her infrastructure such as that in Cunene and also wanted to continue diplomatic and related interaction with the Angolan ruling party. This resulted in more friendly relations between Namibia and Angola which still persist.[587]

Relations between Angola and Botswana have not also been bad. Botswana had somewhat a stand aloof policy when it came to the war and military issues in Angola thus it was not directly involved. Botswana actually strengthened its diplomatic ties with Angola after the civil war and the two countries have not been so politically or militarily antagonistic to each other.[588]

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[586] See Hamutenya, *supra*, note 582, p. 98ff.

[587] *Ibid*, p.96ff.

[588] *Ibid*, p.99.

On water issues, Angola had not raised concerns with Botswana at the time of this research because it had not officially announced any project which could adversely affect the ecology of the Okavango Delta in Botswana.[589] However, Botswana was already accusing Angola of reducing water flow into its delta because of small water development installations which Angola had started to install. Further, potential conflict arises as we consider the geostrategic position of Angola as a major contributor to the water flow into the Okavango Delta.[590] As has been noted on several occasions in the previous Chapters, Angola contributes more than 90% of the water that flows into the Okavango Delta. Angolan geostrategic position can trigger problems if Angola embarks on massive water development projects in the upper catchment of the River. This is an expected development in the Basin which requires proper legal structures in place in order to achieve transboundary water equity.

Relations between Namibia and Botswana have not been so favourable. As shall be illustrated below, Namibia and Botswana have been confronting and opposing each other

[589] Hamutenya, H. 2014. Namibia and Angola: Analysis of a symbiotic relationship', in Bosl, A. 2014. *Namibia's Foreign Relations Historic contexts, current dimensions, and perspectives for the 21st Century*. Konrad Adenauer Foundation, Windhoek, p 99.

[590] *Ibid*.

on various occasions. The countries had even a bigger dispute over the Kasikili/Sedudu Island which eventually led them to the International Court of Justice. Thus Ashton says:

> The ICJ ruling is very welcome after a relatively long period of protracted debate and intermittent threats of military action, including formal military occupation of the island by the Botswana Defence Force. The Sedudu/Kasikili Island dispute provides an excellent example of a water-based conflict situation that reached a high level of tension, preventing resolution of the problem by the disputing parties, thus requiring an independent third party (the ICJ) to be called in to arbitrate the dispute. However, it is important for us to note that, like all other rivers, the Chobe River is a dynamic system where the shape and position of its channels will change over time. Natural processes of sediment deposition and erosion will continue to occur, each depending on the flow patterns in the river. Therefore, it is inevitable that the Chobe River will continue gradually to alter the position and configuration of its main channel in the future. Future changes in the position or shape of the main channel could possibly become a source of future dispute between the two countries.[591]

[591] Ashton, P. 2000. 'Southern African Water Conflicts: Are They Inevitable or Preventable?' In: Green Cross International. 2000, *Water For Peace in the Middle East and Southern Africa.* Green Cross International, Geneva; pp.94-98, p.5.

The Kasikili/Sedudu dispute was mainly a dispute about territorial sovereignty as opposed to being a purely water dispute. However, water remains central here since it is the physical driving force for changes to the aquatic system that forms the territorial boundary and "unless these two countries jointly develop a formal protocol to address this type of situation, similar cases of "water-related conflict" can be expected to occur in future."[592] This justifies the appendicing of Annexure A to this Dissertation.

6.2.4 Hegemonic tendencies and the balance of power

Another dimension of the hydro politics question has to be considered regarding especially the balance of power: Who actually holds the sway? Which country controls the affairs of the Basin and generally who has the most power to signal a red or green light on water development projects? These questions are relevant as they allow one to interrogate the cooperative and conflictive interactions among the three riparian states. thus a drive towards the answer to the research question on how regime theory can help us understand interstate water co-operation in the context of the Okavango River Basin and whether based on this understanding a typology or model for Okavango River Basin can be constructed. The answers inform the principles to be incorporated into the annexure to this dissertation; Annexure A especially.

[592] *Ibid*.

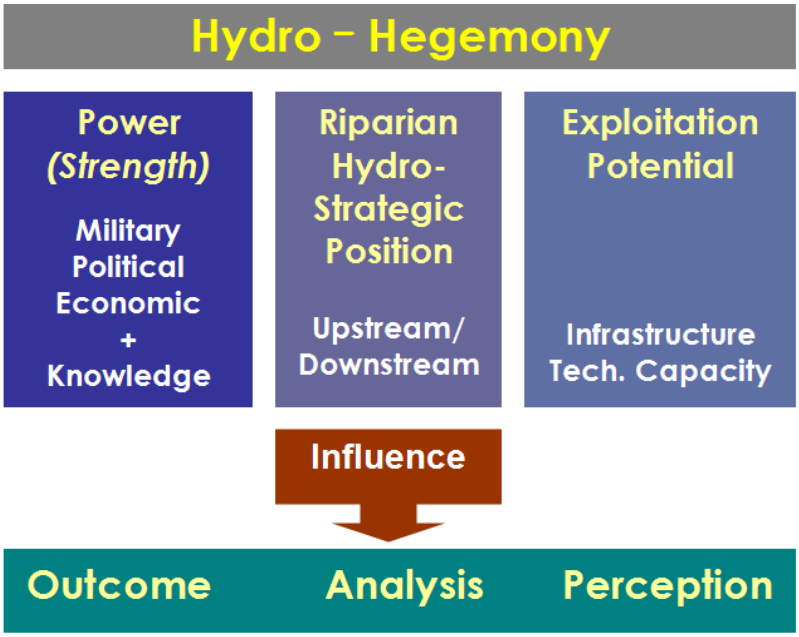
Hegemony is defined as the conscious system of ideas and beliefs and a lived social process as practically organised by specific and dominant meanings and values. The political legitimacy of the hegemonic power is legitimised when the values and interest of the dominant party appear to be representative of and beneficial to all, such that particular meanings seem to be universally true and acceptable.[593] In the context of water relations the the term widely used is hydro hegemony. Zeitoun,[594] is one of the authors who has explained how states relate to each other in a basin context and how hegemony plays a part in water relations.

[593] Williams, R. 1977. *Marxism and Literature.* Oxford: Oxford University Press, p.109.

[594] Zeitoun, M. 2005. Hydro-hegemony theory – a framework for analysis of water-related conflicts. First International Workshop on Hydro-hegemony. King's College, London, 21–22 May 2005. London School of Economics, London. Available at http://www.lse.ac.uk/collections/geographyAndEnvironment/CEPG/LWRG/Publications/LWRG_

HydroHegemony2005.htm. last accessed 20 March 2013.

Figure 7: Hydro–hegemony and its dimensions



Source: Zeitoun [595]

The diagram above shows that a state can use its power be it military, economic, or political strength to assert its hydro strategic position. Botswana is indeed asserting its

[595] Zeitoun, M. 2005, *supra*, note 594.

hydro strategic position by using the Delta which is a Ramsar site[596] in the process. Also Botswana is using its economic power in the process as the richest and most economically self-reliant of the three riparians. Although Angola and Namibia have geostrategic positions as upstream states, they are less powerful. In this situation, as Zeitoun[597] comments, a country like Botswana will not be so interested in cooperation on infrastructural developments on the river since it is not so interested in negotiations. The lack of interest in negotiations is fostered by the fear of losing its favourable position of conceding to what may compromise its hegemonic power. As shall be seen below, after a consideration of the water events, indeed Botswana had not yielded an inch to allow the Delta to be affected in any way even though there would have been ways to mitigate such impact on its Delta.

Between Namibia and Botswana, despite the existence of the OKACOM Agreement, there has been some wrangling and at times significant and clear opposition of each other

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[596] A Ramsar site is a wetland of international importance. The convention on wetlands is an inter-governmental treaty which provides a framework for the conservation and wise use of wetlands and their resources. The Convention was signed in Ramsar, Iran, in 1971.

[597] Ibid. see also Wolf, A.T. 1994. A hydro-political history of the Nile, Jordan, and Euphrates River Basins. In Asit, K. Biswas (Ed.), *International Water of the Middle East from Euphrates-Tigris to Nile*. Oxford University Press, pp. 5-43.

in disregard of the existence of the Commission or at least the provisions of the Agreement itself. This indicates that the riparians are sometimes inclined to follow national interests or generally politics and not law. This stance indeed has caused tensions and if no clear legal framework is worked out on how to handle transboundary water equity among the riparians, then there are clear signs of conflicts looming.

Generally, it seemed most of the goings-on in the basin were to the advantage or desires of Botswana in that she always pleaded that her Delta would be damaged leading to a chain of other socio-economic problems. Botswana seemed to have more power regarding what should and should not happen. Angola and Namibia had been opposed by Botswana on various projects they intended to undertake for the development and betterment of their communities or populations. In most of the incidences as shall be shown below, Botswana seemed to have been the hegemonic state. The most powerful of all the three thus had an upper hand in the negotiations or in just opposing and lobbying for opposition.[598]

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[598] See Hasler, R. 2000. 'The Hydro-politics of the Okavango Delta: Property Rights and the Management Implications of Competing Land and Water Use Strategies.' *Botswana Notes and Records.* 2000 (32): 73-83 see also Ashton, PJ and Neal MJ. 2003. 'An Overview of Key Strategic Issues in the Okavango River Basin,' in Turton, AR. Ashton, PJ and Cloete, TE. (Eds). 2003. *Transboundary Rivers, Sovereignty and*

The power of Botswana to control other states' actions was mainly bolstered by the fact that Botswana managed to have the Okavango Delta declared a Ramsar site, meaning that it should have been treated as a wetland needing special conservation methods. This gave Botswana the 'political muscle' to control or veto the projects of other riparians especially Namibia. The use of the Delta as a Ramsar site in the interactions has led to the securitisation of water issues in the Basin and has pointed to a situation whereby other riparians saw it as a selfish way of managing the Okavango River Basin.

Botswana, therefore, stands as the hegemonic power, using the Delta as a bargaining chip and using it at international level to mobilise opposition to water development projects along the river thus torpedoing the projects. This hegemonic behaviour has a huge effect on transboundary water equity in the basin as shall be explained in greater detail towards the end of this chapter. Angola is not to be ignored for it is geographically positioned to exploit most of the Okavango River. Angola being an upper riparian means that it can be the hegemony in the basin when it is no longer a 'sleeping giant' but the actual active giant in the Basin. If there is a shift in the balance of power the Okavango River will not be as pristine as it is when Angola uses it for its development.

Development: Hydropolitical Drivers in the Okavango River Basin. AWIRU and Green Cross International, Pretoria, Geneva, pp31 -63, pp.40-63

The cases below will illustrate that the needier and less powerful riparian states such as Namibia and Angola will always seek to negotiate and cooperate. If Botswana has to negotiate it will choose to negotiate in cases where it knows it stands to benefit the most such as the continued recognition of the conservation and tourism needs in its Delta. This kind of cooperation is not favourable in the context of trying to achieve transboundary water equity. An agreement where one dominant or hegemonic state gets the biggest benefit out of other state's compromises cannot last[599] because there are no equity considerations in it.

6.2.5 Environmental Security and International Water Relations

Water management and development in the Okavango River Basin affects the ecology of the whole basin and Botswana has used this argument to restrict or stop water development projects in the Basin because of environmental impact such developments can have on the ecological health of the Delta. This is reasonable because when the people

[599] See remarks of this nature in Lowi, MR. 1995. *Water and Power: the Politics of a Scarce Resource in the Jordan River Valley.* Cambridge University Press. See also Lonergan, SC. and Brooks, D.B. 1993. *Economic, Ecological, and Geopolitical Dimensions of Water In Israel*. The Centre for Sustainable Regional Development (CSRD), the University of Victoria.

resident in the Okavango Delta oppose any water development project upstream, they send a message of environmental insecurity.

This message affects how the three riparians relate to each other. Nations inherently conflict with each other on various aspects and at different levels. In such a situation one would wonder whether there would ever be environmental security in some areas, the Okavango not excluded. Thus, Hurrell and Kingsbury asks:

> Can a fragmented and often highly conflictual political system made up of over 170 sovereign states and numerous other actors achieve the high (and historically unprecedented) levels of cooperation and policy coordination needed to manage environmental problems on a global scale?[600]

Indeed, water is an element of the environment and as such it is to be understood that environmental concerns are indeed a matter of national, regional or even international security. Looked at from this angle, it worth remembering that Robert Kaplan wrote in

[600] Hurrell, A and Kingsburry, B. (eds) 1983. *The International Politics of the Environment*. Oxford: Claredon, p.1.

the 1990s[601] about environmental change and international security. He predicted that environmental change would spark hostilities across the globe and that would certainly be a global security concern. Although Kaplan centred more on environmental change and how it can cause poverty, it has become clear in recent years that affluence actually causes more environmental disruption than poverty. Put differently, affluence causes environmental degradation, environmental degradation causes poverty, poverty causes conflict over resources and at the end of the chain a security question at national, regional or international level arises.

Environmental issues such as water scarcity have been linked to international relations for a while but there has not been a clear theory propounded to create a link because there was still substantial debate on whether, in the first place, the discussion was warranted. Robert Kaplan sounded like a real neo-Malthusian when he wrote:

> We are entering a bifurcated world. Part of the globe is inhabited by Hegel's and Fukuyama's Last Man, healthy, well fed, and pampered by technology. The other, larger, part is inhabited by Hobbes's First man, condemned to a life that is 'poor, nasty, brutish and short.' Although both

[601] Kaplan, R. 1994. "The Coming Anarchy. How Scarcity, Crime, Overpopulation, Tribalism, and Disease are Rapidly Destroying the Social Fabric of Our Planet." *Atlantic Monthly*, 273(2), 44-6, 48-9, 52, 54, 58-60, 62-3, 66, 68-70, 72-76.

> parts will be threatened by environmental stress, the Last Man will be able to master it; the First Man will not. The Last Man will adjust to the loss of underground water tables in the western United States. He will build dykes to save Cape Hatteras and the Chesapeake beaches from rising sea levels, even as the Maldives Islands, off the coast of India, sink into oblivion, and the shorelines of Egypt, Bangladesh, and Southeast Asia recede, driving tens of Millions of people inland where there is no room for them and thus sharpening ethnic divisions.[602]

Thomas Hommer Dixon[603] was confronted with a similar difficult question of trying to link environmental problems to international conflicts and he tried to link politics, natural science and economics but still was forced to come back to the conclusion that there was no direct link between environmental insecurity and international insecurity and there seemed to be no foreseeable conflict or at least militarised conflict over environmental issues.

International Relations Theory can be used to explain the nature of interactions between the three riparians in the Okavango River Basin. If there is agreement that environmental threats are global, it can be accepted that there is no way to solve or to prevent them

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602 *Ibid*, p.58.

603 *ibid*.

without international cooperation and multilateralism. In the processes of cooperation there is great need to consider equitable outcomes and in the case of transboundary water law, there is need to foster transboundary water equity. In relation to this, Sverre Stub says:

> Unresolved environmental issues can lead to regional instability and conflict. Disputes over water resources in the Middle East are illustrative. Increasingly, environmental security, broadly defined must be part of the security concept in Europe. Environmental security threats are most often cross-border in nature. Such threats may not in themselves cause military conflict between states. But together with other sources of tension, such as ethnic discrimination, they may lead to violent conflict.[604]

Recognising the link between environmental security and potential conflict, Agenda 21 concluded that unsustainable patterns of utilisation and or consumption were the major causes of environmental degradation and preventive measures were necessary. In the context of international water relations, it is important to note that if there is unsustainable and inequitable utilisation of the Okavango waters, potential conflict looms in the Basin. This combined with other points raised in this dissertation calls for a concerted effort

[604] Stub, S. 1997. 'Our Future – Common, or None at all.' In Gledtsch, NP. 1997. *Conflict and the Environment.* Kluwer Akademic Publishers. Dordrecht. The Netherlands, pp3-14.

towards water security in the basin by following sustainable patterns of utilisation hinged on the concept of transboundary water equity.

6.2.6 Angola: As a 'devastating potential' and a 'Sleeping Giant'

Angola went through a civil war which left her environmental resources such as water in the Cuito valley, the upper part of Angola undeveloped much like most of the River which remains pristine.[605] The ethnic populations are generally divided and politically there are evident division due to the sides which were involved in the civil war.[606] Indeed, peace in Angola can be viewed as a 'dividend' but it does not come free for the Okavango River. The river may have to pay for this peace one day or it has already begun though yet unnoticed for the stability ushered in Angola since 2002 when the civil war ended. The political strife in Angola which saw a civil war raging for more than two decades can be taken as a blessing in disguise in so far as the development of the upper reaches of the river are concerned. Most of the stream flow in the basin is generated within Angola, which has been called *"the sleeping giant"* in the sense that water resources in Angola

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[605] Ashton, PJ and Neal MJ. 2003. 'An Overview of Key Strategic Issues in the Okavango River Basin,' in Turton, AR. Ashton, PJ and Cloete, TE. (Eds). 2003. *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin.* AWIRU and Green Cross International, Pretoria, Geneva, pp31 -63, pp.40-63.

[606] *Ibid*.

are relatively unexploited. Future developments, however, could have serious consequences to the water availability of the downstream countries.[607]

Therefore, the so-called peace dividend in Angola is not a dividend at all. It may come with a cost in that Angola has plans to relocate its displaced populations and the most likely region will be the agriculturally viable regions which form the headwaters of the River.[608] Further, Angola plans to build infrastructure for irrigation in this region thus there would be intensification of agriculture. This agricultural development is likely to result in the introduction of agro-chemicals into the aquatic system.[609]

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[607] Pinheiro, I., Gabaake, G., and Heyns, P. 2003. 'Cooperation in the Okavango River Basin: The OKACOM perspective,' in Turton, A., Ashton, P., Cloete, E. (Eds.), *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin.* African Water Issues Research Unit/Green Cross International/University of Pretoria, Pretoria, pp. 105–118.

[608] *Ibid*.

[609] Turton, AR. 2001. *Sea of Sand, Land of Water: A Synopsis of Some Strategic Developmental Issues Confronting the Okavango Delta*. MEWREW Occasional Paper No.6. Water Issues Study Group, School of Oriental and African Studies (SOAS), University of London.

Extensive agriculture in the predominantly sandy soils of the catchment area could introduce phosphates and nitrates which in turn could disrupt the balance between different plant communities in the Delta.[610] The Delta region is specifically sensitive to this, being oligotrophic in its natural state.[611]

The introduction of leached fertilizers would probably lead to eutrophication of the water downstream, impacting profoundly on the structure and functioning of the ecosystem.[612] This will inevitably create scuffles between Botswana and Angola as the former has already started accusing the later regarding levels of water in the river as shall be made clearer below.

Further the peace dividend is not one in the sense that increased abstraction of water in Angola for either irrigation or industrial purposes will have an obvious reduction of the total volume of water which used to flow downstream. As Turton notes, this is where the usefulness of the 'blue/green' water concept comes in. He notes that abstraction of 'blue water' by Angola will impact less in terms of volume, whereas abstraction of 'green

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[610] *Ibid*. see also McCarthy, TS and Ellery, WN. 1993. 'The Okavango Delta.' In *Geobulletin,* 1993 36(2): 5-8, p8.

[611] Turton, A.R. 2001, *supra,* note, 602, p.21.

[612] Ellery, & McCarthy, *supra,* note 470, p.166.

water' will greatly affect the flow.[613] The reason the author gives for this is that 'green water' is largely lost as transpiration, whereas 'blue water' can be recycled back to the system, albeit with possible loss of quality.[614]

As a last comment on this aspect, indeed the peace should not be regretted; it may present challenges but it remains an advantage. This is because the Okavango system has a very low suspended solids load. So with increased agricultural practices upstream in Angola this could result in greater runoff with a direct increase in siltation.[615] While siltation is an important natural dynamic within the overall aquatic system, this depends on a specific type of silt load to function normally. Depending on how the legal regime within the basin will then be structured if the recommendations including Annexure A and B to this Dissertation are not considered, the basin's communal inhabitants, including urbanisation, industrialisation and hydropower schemes, have the potential to change the face of the basin to the worse if not worst.[616]

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[613] Turton, A.R. 2001, *supra*, note 602, p.21.

[614] *Ibid*.

[615] *Ibid*.

[616] Ellery, W.N and McCarthy, T.S. 1994. 'Principles for the Sustainable Utilisation of the Okavango Delta Ecosystem: Botswana.' *Biological Conservation.* 1994 70(2): 159-168.

6.2.7 Climate change and water scarcity in Namibia

Climate change is "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."[617] Water scarcity is understood as "the lack of secure uninterrupted and long term availability of adequate amounts of freshwater of required quality on regular basis and for multiple needs.[618] Although River Basins can be resilient when it comes to climate change,[619] this phenomenon has already reached alarming proportions in some parts of the world and especially semi-arid areas which do not exclude Botswana and Namibia. Although Southern Africa is regarded as water abundant, the position of the two mentioned countries coupled with pessimistic predictions of climate change in the region, makes one

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[617] United Nations Framework Convention on Climate Change. FCCC/INFORMAL/84 GE.05-62220 (E) 200705. Gland, Switzerland.

[618] Elhance, A.1999. *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins.* Washington, DC: US Institute of Peace Press, p. 4.

[619] See remarks in De Stefano, L., J. Duncan, S. Dinar, K. Stahl, K. Strzepek, A. T. Wolf. 2012. "Climate Change and the Institutional Resilience of International River Basins." *Journal of Peace Research*. 49(1): 193–209.

2010. 'Mapping the Resilience of International River Basins to Future Climate Change Induced Water Variability.' World Bank's *Water Sector Board Discussion Paper Series*, Paper No. 15, March 2010.

worry about the climatic future of the Okavango River Basin. This is one of the major reasons why neo-Malthusians have predicted wars over water.[620]

Climate change is not an issue to be ignored in so far as the politics of internationally shared watercourses is concerned and the Okavango river Basin is not to be excluded. Climate change effects are more felt at a larger scale or more at global level but there is evidence or literature to the effect that the Okavango River Basin is being affected by global climate change. Projections for the impact of climate change by Anderson and others are expressed in the following terms:

> … river discharge of increased water use for domestic use, livestock, and informal irrigation (proportional to expected population increase) is very limited. Implementation of all likely potential formal irrigation schemes mentioned in available reports is expected to decrease the annual flow by 2% and the minimum monthly flow by 5%. The maximum possible impact of irrigation on annual average flow is estimated as 8%, with a reduction of minimum monthly flow by 17%. Deforestation of all areas within a 2 km buffer around the rivers is estimated to increase the flow by 6%**.** However, construction of all potential hydropower reservoirs in the

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[620] Ohlsson, L. 1999. *Environment, Scarcity and Conflict: A Study of Malthusian Concerns*. Unpublished PhD Dissertation, Department of Peace and Development Research, University of Goteborg.

> basin may change the monthly mean flow distribution dramatically, although under the assumed operational rules, the impact of the dams is only substantial during wet years. With the exception of the high impact development scenario of hydropower schemes, the simulated impacts of climate change are considerably larger than those of the development scenarios, although the results are sensitive to the choice of GCM and the IPCC SRES greenhouse gas (GHG) emission scenarios. The annual mean water flow predictions for the period 2020-2050 averaged over scenarios from all the four GCMs used in this study are close to the present situation for both the A2 and B2 GHG scenarios. For the 2050-2080 and 2070-2099 periods the all-GCM mean shows a flow decrease of 20% (14%) and 26% (17%) respectively for the A2 (B2) GHG scenarios.[621]

The authors go on to say that whilst in Southern Africa as a whole the projected climate change and river runoff response have been shown to be quite consistent in previous

[621] Andersson, L. Wilk, J. Todd, M. Hughes, DA. Earle, A. Kniveton, D. Layberry, R. Savenije, HHG. 'Impact of climate change and development scenarios on flow patterns in the Okavango River.' Swedish Meteorological and Hydrological Institute. Stockholm

studies,[622] the focus on a single basin highlights the importance of sub-regional details in climate change impact studies. However, as the authors cautiously remind users of this data, it should indeed be noticed that the magnitude of predicted changes under climate scenarios is far in excess of that associated with the development scenarios. In this regard it is likely that the variability of the Okavango river discharge will also increase.[623] As the authors further note and in line with this dissertation, "these findings highlight the need to develop appropriate mitigation strategies for water resource use in the region."[624] Thus "to reduce the uncertainty in future climate predictions there is a need for more detailed research into this topic."[625]

In light of the above, the tone of climatologists is that things are not going to be all the same or as good as they are now. There is prediction that there will be reduced precipitation and of course the chain reaction begins with reduced flow and the rest.[626]

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[622] Andersson, L. et al 2009, *supra*. See also Arnell, NW. 2003. 'Effects of IPCC SRES Emission Scenarios on River Runoff: A Global Perspective.' *Hydrology and earth System Sciences*, 2003 (7):619-641.

[623] Andersson, L. et al 2009, *supra*, note 622, p.22.

[624] *Ibid*.

[625] *Ibid*.

[626] See Ruppel, OC. 2010. 'Climate Change and Human Vulnerability in Africa.' In Ruppel, OC and Ruppel-Schlichting 2010. *Environmental Law and Policy in*

Hearing this from the Namibian side which is already threatened by water scarcity, there is potential for conflict as water demand may not match the growing population of Namibia.[627] Further Namibia is moving towards being an industrialised and knowledge-based economy as per its Vision 2030 which is a national plan for development over many years. This may imply demand for water yet climate change signals less water and more dry spells.

The human need versus the natural situation may not produce 'good' politics within the Basin should the situation regarding how the three riparians sharing the Okavango River

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Namibia, p.309; and Mapaure, I. 'Climate Change in Namibia: Projected Trends and Effects', in Ruppel, OC and Ruppel-Schlichting 2010 *Environmental Law and Policy in Namibia*, p.290. See also Carpenter, S.R. Fisher, S.G. Grimm, N.B. & Kitchell, J.F., 1992. 'Global Change and Freshwater Ecosystems.' *Annual Review of Ecology and Systematics.1992* 23:119-139; Schindler, D.W., 1997. "Widespread Effects of Climatic Warming on Freshwater Ecosystems in North America". *Hydrological Processes*, 11(8), p.1043-1067.

[627] See generally Mapaure, C. 2012. 'The Politics of Rural Water Supply in Namibia: Exploring the Dynamics of Multi-layered Institutional Interactions', in Manfred, O Hinz, Ruppel, OC and Mapaure, C. (Eds), 2012. *Knowledge lives in the Lake: Case Studies in Environmental and Customary law in Southern Africa.* Namibia Scientific Society. Windhoek; pp.233-258.

Basin not diplomatically or otherwise relate well to each other. The situation regarding how Namibia and Botswana may want to deal with this situation and how it may cause conflict will be further explored under the subtopics below.

6.3. International Water Relations and Hydro politics in the Basin

Having considered some background issues affecting the politics between and among the riparians in the Okavango River Basin, it is now imperative to consider some specific water events which have shaped the water relations in the Okavango River Basin. These water events/case studies are reflective of what has been described and explained above which is a combination of political, environmental and legal issues. The aim here is to answer research questions as stated in Chapter 1 above and specifically the questions stated in the first parts of this chapter.

6.3.1 The Southern Okavango Integrated Water Development Plan

After her independence, Botswana planned to implement developments in her territory using Okavango waters. This was not to come easy as other riparian states and the international community especially environmental groups and agencies were not so happy to see the project through. Around 1966 the Government of Botswana requested funding from the United Nations and other international donors to develop what came to be known as the Southern Okavango Integrated Water Development Plan (SOIWDP).

This plan was mainly aimed at transferring Okavango waters to Eastern Botswana.[628] The SOIWDP plan was inspired by Sudan's Gezira Irrigation Scheme. The geographer Wellington visualised irrigation of cotton plantations in the Okavango/ with well-built rail network to the coast where the cotton would be transported for export to European Markets.[629]

The Government of Botswana had to commission a study into the feasibility of the plan. Two studies were conducted under the auspices of the UNDP and FAO. Several other related studies were conducted, but it was only in 1988 when the Government of Botswana approved the project. The approved plan included 10 000m hectares of commercial irrigation and 5000 hectares of improved flood recession agriculture raising local living standards and improved water supplies for Maun riverrain villages, the town of Rakops and supply of water to Orapa mines. The plan also included the building of two dams along the improved channel of Boro River which flows from the Delta. A large

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[628] See Scudder, T. 2008. 'Okavango River Basin,' in Varis, O. Tortajada, C and Biswas AK. 2008. *Management of Transboundary Rivers and Lakes*. Springer – Verlag. Berlin Heidelberg, pp 81 – 102.

[629] Ibid. see also Wellington, J.H. 1949. 'Zambezi-Okavango Development Projects.' *The Geographical Review*. XXXIX, No.4:566 -567. Wellington, J.H. 1949. 'A New Development Scheme for Okavango Delta, Northern Kalahari.' *The Geographical Journal*, CXII (January – June), pp62 – 69.

dam would also be built at Sukwana to provide water to Rakops and a pipe line would be built to Orapa mines.

Public meetings were arranged. One notable meeting being that of 11 January 1990 which was held just a few weeks before the construction works would start. There was massive opposition to the government by local communities and that was viewed as the largest open opposition to the Government of Botswana since independence. The Government did not expect such opposition and thus decided to suspend the project and do further assessments. Scudder comments:

> The government's reaction to the outpouring of opposition was pioneering. Not only was the project temporarily suspended but for the first time to my knowledge, the government sought a detailed evaluation in the case of IUCN, of a major water resource development project from an outside non-governmental organization. Their willingness in this regards sets an example of other nations faced with similar difficult problems of natural resource development. … Over a period of four months the IUCN pulled together a 13-member team from four different nationalities and recruited from 12 different organisations. With some of the 13 member team trained in two disciplines, the team comprised

> biologists, computer modellers, engineers, hydrologists and hydro-geologists, land use and regional planners, and social scientists. [630]

The team saw negative impacts on local communities and difficulties in re-evaluations as major hindrances to the success of the project and decided to cancel the project and replace it with one which did not have so much infrastructural development and one which did not alter the flow of the Boro as much as the planned South Okavango Integrated Water Development Project (SOIWDP). The major SOIWDP goals were retained but infrastructural development was reduced and emphasis was put on the conservation of the natural resource base of the Okavango Region. As for development of the existing economies at village and district levels, "special attention that paid to ensure that the IUCN alternative was strongly participatory and that it built on the multi-stranded initiatives that villagers used to maintain and improve their living standards."[631]

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[630] Scudder, T. 2008. 'Okavango River Basin,' in Varis, O. Tortajada, C and Biswas AK. 2008. *Management of Transboundary Rivers and Lakes*. Springer – Verlag. Berlin Heidelberg, p.88. See also Scudder, T. 2005. *The Future of Large Dams: Dealing with Social, Environmental, Institutional Political Costs.* Earthscan, London.

[631] Scudder, T. 2008, *supra*, note 630, p.88. See also Scudder, T. 2005, *supra*, note 630, p. 203.

The IUCN presented its report to the Government of Botswana in May 1992 but the Government did not like the report and its recommendations. In fact, the Government, after facing opposition from Ngamiland District already, announced on the radio before the report was made public that the project had been suspended. Several newspapers quoted the President of Botswana after the suspension of the project saying that the SOIWDP would be revitalised and the people would benefit from it. In 1994 OKACOM was formed and Botswana showed support for it. The Government of Botswana still considers the Okavango as a sensitive river and any plans have to be undertaken with special care considering its ecology and the perceptions of the local communities depending on the river for their survival.

The failure of the government to implement the SOIWDP shows interesting points. Although the Government of Botswana has permanent sovereignty over the Delta, it cannot just do as it wishes. The plans of the government are obviously affected by the local populations and the international community. The government acted responsibly by taking heed of the opposing voices thus "Botswana is now presenting itself as a socially and environmentally responsible actor, liaising with IUCN on wetland conservation and promoting another, less tangible type of security: a positive reputation."[632]

[632] Warner, JF and Meissner, R. 2010. 'The Politics of Security in the Okavango River Basin: From Civil War to Saving Wetlands (1975 -2002) – A preliminary Security Impact assessment,' in Wegerich, K. and Warner, J. 2010. *The Politics of Water: A*

6.3.2 Eastern National Water Carrier (ENWC), Phase 5

In the mid 1990s, Namibia experienced severe drought and water supply was limited. The government decided to implement Phase 5 of the Eastern National Water Carrier (ENWC). This phase would mean the extraction of water from the Okavango River and pumping it down the Rundu-Grootfontein pipeline. The plan was intended to increase water supply to the central parts of the country especially Windhoek, the capital. A 1993 study[633] about supplying the central Namibian region with water confirms an earlier Master Plan from 1972[634] which states that a pipeline would eventually be built from the Okavango River to Grootfontein, linking the river system with Windhoek.[635]

Survey. First Edition. Rutledge. London and New York, pp3 – 17. Austin, J.L. 1962. *How to do Things with Words: The William James Lectures Delivered at Harvard University in 1955.* Oxford: Clarendon, p.268.

[633] Ministry of Agriculture, Water and Rural Development, Department of Water Affairs. 1993. Central Area Water Master Plan. Phase I. GTZ

[634] Shand, N. 1971. "Water resources investigation and planning for part of the Central Area of South West Africa. Report on ground water investigation - Drilling carried out from January 1970 to January 1971." Windhoek, Ninham Shand, pp 27ff.

[635] *Ibid*.

The implementation of this plan was met with opposition from Botswana and there was a low level dispute between the two countries. The media and other interest groups started talking of a 'water war' between the two countries.[636] Stakeholders in the dry downstream state of Botswana were concerned about the potential impact of the pipeline on the delta which houses rich biodiversity and supports the tourism industry for Botswana.

Namibia's plan to finalise Phase 5 was not done through OKACOM channels. Effectively, Namibia bypassed OKACOM and decided to 'go it alone' without consulting other riparians. It seems Namibia's claims were based on sovereign claims to the section of the river that forms part of her territory. Some authors have commented on this case saying that when Namibia bypassed OKACOM, it made the latter to appear no more than a mere paper tiger.[637] This case shows that in many instances competition for resources has the potential to cause conflict. But the level of conflict between the riparian countries of the Okavango River Basin has to date been limited to verbal disputes, particularly between Botswana and Namibia.[638]

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[636] See Meissner, R. 1998. 'Water Wars. Myth or Reality?' *SAIIA Review*, 1998 6(1):

[637] See Davidsen, PA. 2010. "Hydrosolidarity as Water security in the Okavango River Basin", in Wegerich, K. and Warner, J. 2010. *The Politics of Water: A Survey*. First Edition. Rutledge. London and New York, pp68 – 95, p.83. see also Ramberg, L. 1997. 'A Pipeline from Okavango River?' *Ambio*. 1997 26(2):129

[638] *Ibid*.

This dispute further illustrates the different user needs for the two countries. This securitises the issue of water between the two countries and the Okavango becomes a security concern between the two countries. In this context Davidsen comments:

> Another aspect that intensifies securitisation in the Okavango (Delta) is the difference in user patterns between Namibia and Botswana. Water for the purpose of tourism in Botswana and irrigation in Namibia strengthens perceptions of monopolisation of use...: that tourism and agriculture are ultimately incommensurable.[639]

Some officials in the Namibian Ministry responsible for water express the same sentiments. They are not happy about the position of Botswana and they indeed see Botswana as monopolising the water because of the tourism in its delta. They also see Botswana as using the status of the delta as a Ramsar site as a cheap bargaining tool to gain international support against the projects of other riparian. Thus Davidsen says:

> A Ramsar site doesn't say the river can't be utilised. Indirectly we accept Botswana, but we do not accept that all the water evaporates in the delta while Namibia has water shortage. If Botswana wants conservation, then

[639] Davidsen, 2010 *supra*, note 637, p.85 -86.

> income from tourism should be divided. Namibia can then irrigate and Botswana can sit under a tree.[640]

The dispute between Namibia and Botswana over this pipeline indicates an antagonism that arises out of a blockade of identity, and as noted above, these are the most powerful when working through the logic of equivalence, where clear-cut divisions exist between those to fear and those to trust.[641] Nevertheless, Namibia decided to shelve the idea when there were heavy rains after 1995 and the water situation in the country improved. This means that the idea is still on the mind of the Namibian Government and it is not scraped from the development plans of the country. Thus, it is predictable that the Okavango River Basin will soon undergo much larger changes than it has seen in the past, and what remains to be determined is how these changes will affect downstream water supplies.

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[640] Davidsen, PA. 2010. 'Hydrosolidarity as Water Security in the Okavango River Basin.' In Wegerich, K. and Warner, J. 2010. *The Politics of Water: A Survey*. First Edition. Rutledge. London and New York, pp.68 – 95, p.86.

[641] Two countries like Namibia and Botswana in this case are logically equivalent if and only if they are true in precisely the same situations. In other words they are logically equivalent if they are having same interests. In the case of Namibia and Botswana, the two have diametrically opposed interests when it comes to the water on the Okavango River basin hence the inherent contradictions where there is fear and trust depending on the issue at hand.

There is very little evidence indicating that there will be significant negative impact on the Okavango River Basin should Namibia pump the planned amount of water from the river. Botswana says that there will be irreparable harm but that seems to be a political rather than a scientifically proven fact. Namibia uses comparative studies and asserts that the impact will be negligible. Authors on hydrology have asserted, also, that indeed, modern technology has actually failed to measure the impact and conclusions are that the impact will be negligible.[642]

However, as noted by Ashton, it is possible that, without further evidence to the contrary, future water shortages will be blamed on upstream abstractions, even if they are caused by climatological factors.[643] The abstraction of water by Namibia may, however, change the water quality as opposed to quantity downstream.[644]

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[642] Ashton, PJ. 2000. 'Potential Environmental Impacts of the Associated with the Proposed Abstraction of Water from The Okavango River In Namibia.' *African Journal of Aquatic Science.* 2000 (25):175 – 182.

[643] *Ibid*.

[644] Ellery, WN and McCarthy, TS. 1994. 'Principles for the Sustainable Utilisation of the Okavango Delta Ecosystem: Botswana', *Biological Conservation.* 1994 70(2): 159-168.

6.3.3 Defensive measures: Delta declared a Ramsar site

After squabbling and fighting a war of words with Namibia, Botswana sought some defensive measure and appealed to UNESCO for protection of its delta and thus it acceded to the Ramsar Convention on 4 April 2007. Botswana then successfully managed to have the Delta declared a Ramsar site of international importance. This basically means that the Delta is a wetland under the Convention and needs to be protected as such. This obviously has huge implications on the hydrological plans of other riparians, and indeed it already has affected their plans especially plans by Namibia which is in desperate need of water.

It must be noted again here, that the politics at play between the two countries is just being played down but it is having significant international water relations and security related concerns attached to it and indeed it portrays how water institutions can be weakened due to unilateral state actions.[645] Namibia did not consult OKACOM in implementing the ENWC and in the same vein Botswana also did not consult or at least notify other riparians about its intention to have part of the river declared a Ramsar site. It is quite clear that Botswana had to rush to UNESCO because of her concerns about the possible developments which upstream riparians would have on her Delta. Thus if the

[645] See similar remarks in Turton, AR. 2003. *The Political Aspects of Institutional Developments in the water sector: South Africa and International River Basins*. University of Pretoria, South Africa, Ph.D. Dissertation.

Delta was declared a wetland Botswana will have a card to play at international level and mobilisation of support in so far as opposition of other riparians' projects will not be difficult. The security component of this interaction is summed up by Davidsen who says:

> Paradoxically, on the one side it is possible to see the Okavango Delta Ramsar site as both a form of institutionalised securitisation established to counteract recurrent threats…and as a venue for desecuritisation, providing benefits to the river through protection and conservation. Equally on the other side, it is possible to view the OKACOM as an arena for desecuritisation through the harmonisation of national policies, but also as a regime that has been inherently securitised from the moment of its inception since, ultimately, a failure to provide for integrated river basin management would be considered a threat to the river and its riparians… eventually behind all the diplomatic and cooperative language, a hidden menace lurks: the threat of uncoordinated river basin management. This explains why the initially desperate process of securitisation and desecuritisation appear simultaneously on the discursive arena under the common panoply of OKACOM.[646]

[646] Davidsen, PA. 2010, *supra*, note 640, p.83.

Indeed “a hidden menace lurks.” On that note it is indicated herein that these uncoordinated projects have created some unease water relations in the Basin and that justifies the recommendations in Chapter 8 on this aspect. Further the case of Popa Falls which is dealt with in more detail below illustrates how the riparians are creating a regime of uncoordinated individualistic projects which only bring in OKACOM when it is convenient for them to do so. Desecuritisation refers to the normalisation of inter-state interaction through the institutionalisation of the conflict potential, by removing water resource management from the security domain and treating it as a technical issue only.[647] This proceduralises the processes involved making them less conflict prone and hence more predictable.

Following the declaration of the Delta as a Ramsar site, the Government of Botswana quickly came up with a plan to conserve the Delta in line with the principles set out in the Ramsar Convention. The government announced:

> The need for the Plan was necessitated by the fact that existing land use patterns for different areas are often guided by somewhat conflicting guidelines and these need to be integrated in a single overall planning framework. The long term goal of the management plan is to provide an integrated resource management for Okavango Delta that will ensure long

[647] Ellery and McCarthy, 1994,*supra,* p.36.

> term conservation and provide benefits for the present and future well-being of the people through sustainable use of its natural resources.[648]

Although the general tone in the above points mainly to conservation, it must be noted that Botswana also uses the Delta as a prime tourist destination and the country gets substantial revenue through tourist activities in the area. The government opted for the low-volume high cost tourism policy which has lessened the impact of people on the environmental integrity of the Delta.[649] Namibia has not stopped thinking about how to use the river to her advantage even though Botswana has had her delta declared a Ramsar site. Namibia intended to build a hydro-power station at Popa Falls where the river crosses the Namibian territory. This aspect is dealt with in more detail below.[650]

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[648] Okavango Delta Information System (ODIS), 2005. Okavango Delta Management Plan Project. Newsletter No.1. Okavango Delta Information System – ODIS. Gaborone. p1.

[649] Davidsen, P.A. 2010, *supra*, p.267. See also Pinheiro, I., Gabaake, G., and Heyns, P. 2003. 'Cooperation in the Okavango River Basin: The OKACOM Perspective,' in Turton, A., Ashton, P., Cloete, E. (Eds.), *Transboundary Rivers, Sovereignty and Development: Hydropolitical Drivers in the Okavango River Basin.* African Water Issues Research Unit/Green Cross International/University of Pretoria, Pretoria, pp. 105–118, p.110

[650] *Ibid*.

Before considering the Popa Falls event, it is important to note that accession to the Ramsar Convention was not just an environmental issue to Botswana; it was also an international security strategy. As the then President of Botswana, Festus Mogae at that time declared, the accession was not divorced from Botswana's security strategy since the country is heavily dependent on tourism for its economic stability. Everything upstream which would negatively impact on the wellbeing of the Delta is thus a security concern to the country for it could torpedo the development of the country and its social and political stability. As Davidsen[651] comments, in this way the logic of difference can work so as to merge the common good of environmental protection with the national security strategy of the Botswana Government, creating a sanctioned discourse where environmental protection is the norm.

6.3.4 The 'water war' intensifies: Namibia's Popa Falls Hydro Power Plan

Almost about five years after shelving the idea of pumping water to the central parts of the country from the Okavango River, Namibia decided to embark on another water development infrastructure. This time it was just near to the Delta, about 50km upstream near the Delta and the plan was about constructing a hydropower station with a capacity of 20MW of power at Popa Falls. These Falls are in the Kavango Region of Namibia where the River crosses Namibian territory flowing to Botswana and immediately fans

[651] *Ibid*, p.83

out into a delta. The idea came about around 2002 and the plan was to have a low-level weir that allows for no water abstraction but constant intake levels to produce the electricity.

This system would release adequate water to maintain the flow of the falls, while diverting water from the diversion weir into a channel towards the hydro-power station.[652] The station would be able to produce power for southern Zambia, western Botswana and south-eastern Angola and would be run by Namibia which would benefit from an increased electricity grid.

Despite the fact that the plan had not been implemented or no construction had been initiated, Botswana already raised its objections to the whole plan citing the negative impact on its Delta. The media and other interest or environmental organisations carried the matter further, reporting the story in very negative tones.[653] Again, Botswana has portrayed itself as a victim against the aggressor, Namibia. The issue once more became

[652] Warner, J.F and Meissner, R. 2010, supra, p.274. See also Maletsky, C. 2002. 'Impact of Popa Scheme Could Be Felt for 'Several Centuries'.' *The Namibian* 10 January 2003.

[653] See e.g.; Maletsky, C. 2003. 'The Popa, Hydro-power Plants Plan gets Cold Shoulder in Botswana.' *The Namibian* 18 February 2003.

highly politicised and securitised. The World Conservation Union on Botswana referred to the Namibian plan in one of its newsletters claiming that:

> The Okavango Delta, home to over 100 000 people and mainstay of Botswana's burgeoning tourist industry is faced with a serious threat. The Delta, in its current diverse and dynamic form, will irreversibly be changed for the worse if plans to build a dam at Popa Falls on the Okavango River in Namibia go ahead…. It would alter two natural processes that together would have a devastating impact on the Okavango, its potentially far reaching consequences demand that it be regarded as the most serious threat the Okavango has faced this century.[654]

Several newspapers joined the war of words with guns pointing at Namibia. The *Ngami Times* a widely-read paper in the Okavango Delta Region, carried several headlines, some of them read like "Stop Rape of Delta"[655] and "Delta Danger – Namibia wants to Dam the Okavango" and referring to the Government of Botswana the paper stated:

> Our government, despite protestations over the years that it would never harm the Delta, now appears to be quite happy with the development, even

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[654] IUCN Botswana, 2003. 'New Threat Looms for Okavango Delta.' *Environment Botswana*. News Archive.

[655] *Ngami Times*, 2003. 'Stop Rape of Delta' Volume 5. Number 154. 24 – 31 January 2003.

> if it does affect the livelihoods of 100 000 people and lead to the eventual destruction of one of the world's great tourist destinations.

The *Ngami Times* was persistently negative in its reports to the extent that it called the Namibian project "sheer madness."[656] The other headline read "Death of Delta or Project Goes Ahead" and in it was a statement "Damming the Okavango River in order to generate power will mean death of the delta and turn Maun into a ghost town. Maun Residents fear that construction works will result in erosion, leading to the river failing to contain the desert." [657] Further the paper went on to report under another headline that:

> There has been no violence but "water wars" have broken out over water levels in the Okavango. Angola says it is not its fault that the volumes are so low and many in Botswana believe that the building of the hydroelectric scheme by Namibia will make things even worse in the years ahead. It has resulted in a war of words between Angolans and Batswana, who are accusing the former of constructing dams and using water for irrigation.[658]

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[656] *Ngami Times*, 2003. 'Okavango Project Sheer Madness' Volume 5, Number 159, 28 February – 7 March 2003. See also Davidsen, 2010, *supra*, p80.

[657] *Ibid*.

[658] *Ibid*.

This last quotation draws in Angola, and shows clearly that Botswana sees herself as a victim of the developments upstream by Namibia and Angola. Angola denies that she caused any water levels to go down but accusations from Botswana do not stop. By international standards the developments in Angola are basically minimal and as already explained above, many experts have said that Angola has basically not developed the river in her territory but should she embark on that, the downstream flow may significantly be reduced. If Angola already denies having caused any negative impact on the flow, there is already an indicator of potential conflict in the future should Angola decide to develop the river further.

Despite the war of words and the tense situation between them as fuelled by negative media reports and opposition from interest groups, the Governments of Botswana and Namibia still have some optimism about the project and thus decided to hold public meetings. Several public meetings were held in Botswana and in Namibia. In Botswana the opposition was quite clear with interest groups especially raising the same concerns about the negative impact the project is likely to have on the Delta and same views were expressed as was done on the SOIWDP and the ENWC which have already been covered above.

In Namibia there were mixed feelings but it seems from the reports that Namibians saw the project as a one that would get them out of power woes. Because of the opposition in Botswana, the Government of Botswana aired reservations to the project yet “the

potential in hydropower generation was far too low compared with the environmental risks involved…the issue definitely represents a threat, but the magnitude and seriousness of this threat is relative and a lot of the media in Botswana have not looked at the facts".[659] Nevertheless the project was shelved for a while and NamPower which is the Electricity utility in Namibia said it could look for options. [660] In the end it can be said that it is quite unlikely that this project will be implemented. It has been shelved for almost a decade. Bringing it out again would most likely provoke the same opposition and sentiments.

It must be noted that Angola's position in all this interaction is not to be underestimated. Although Angola appears as a 'low-profile' figure in this interaction, with the main players being Namibia and Botswana, Angola as an upstream state contributing more than 90% of thru-flow into the Delta which is a Ramsar site and it (Angola) is not bound by the Ramsar Convention, can cause significant conflict. This is where the issue of water becomes politicised and securitised creating fractious international water relations in the Basin. The issue of security will now be linked to transboundary water concerns below, all in the context of the Okavango River Basin especially the events covered above.

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[659] See Eco Plan, 2003. "Pre-Feasibility Study for the Popa Falls Hydro Power Project: Preliminary Environmental Assessment, Executive Summary". Windhoek, Namibia.

[660] See also Heyns, P. 2000. "The Challenge of Sharing Water on the Okavango River System". Paper presented at the 4th Biennial Congress of the African Division of the International Association of Hydraulic Research, Windhoek 7-9 June.

6.4 Achieving transboundary water equity amidst security and political concerns

The selected events above indicate a number of issues which are interesting, especially considered from an international water relations perspective. Firstly, the interaction between Namibia and Botswana and between Botswana and Angola are to be understood in the context of the balance of power which has been dealt with above. Further, it must be understood in the context of the tactical positions of the respective countries.

Secondly, one has to note that Namibia is one of the four most developed economies in Southern Africa, the other three being Botswana, South Africa and Zimbabwe. This tells one that Namibia and Botswana have the developmental agenda on the table and are at the same time experiencing water stress as the most arid countries in the SADC Region. This geographical fact brings out competition over a scarce resource and such competition is for use of the water in very different ways with Namibia being a more abstractive and consumptive country versus Botswana which is mainly emphasising tourism thus service oriented. The competition or at least the opposition from Botswana can be eased if Namibia resorts to virtual water.

It has also been indicated above that Botswana uses the victim-cry-foul tactic in dealing with the water development projects upstream. This explains why Botswana decided to have the Delta declared a Ramsar site thus increasing its bargaining power in the process because the international community has to stand up and listen whenever Botswana cries

about ‘assaults’ to the Delta. This brings up the logic of equivalence which has been noted in brief above. Relevant to this research, Davidsen writes:

> The logic of equivalence works so that actors in Botswana have been able to downscale internal differences by portraying themselves as ‘victims’ as opposed to the Namibian ‘perpetrator’. This depicts how the coalition attempts to create unity among different interests by relating them to a common project and by establishing a frontier to define the forces to be opposed.[661]

Using this logic, therefore, it is apparent that Botswana securitises the issue by drawing in actors in Maun and the local traditional communities in the Delta area. The argument arises that Namibia or Angola are blocking the free flow of the river thus ‘our delta’ will ‘die’ comes up and find immediate support within Botswana. As Davidsen[662] argues, when the issue of water is securitised in this way cumulative threat perceptions blur the distinction between natural and human-induced hazards because at first it may appear that nature threatens society. However, where the means to handle natural hazards are thought to exist, the logic of security works less against nature than against the failure of the human institutions which are located within and without Botswana.

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[661] Davidsen, 2010, *supra*, note 640, p.103.

[662] See Davidsen, 2010, *supra*, note 640, p81.

It is in this context that the Delta is used by Botswana as a centre stage of identity where the people in there are told about who they are, who they are not and thus, what they have to do to counter Namibian and Angolan water development projects. Contextualising this to the stated research questions under consideration, it has now to be noted that understanding the securitisation of the water issue especially by Botswana in the Okavango Delta and the power dynamics at play, the signing of the water agreements on the use and management of Okavango waters has not led to cooperation potential. The conflicts exist and at times as has been shown above, OKACOM itself is side-lined or is consulted when it is to the convenience of the riparians. In this light, it is clear that previous water events including the ones considered above do not necessarily lead to treaty signing and in the case of OKACOM, it was not necessitated by water events. What necessitated OKACOM are the drivers stated above and also other factors which will be considered shortly below.

Still relevant to the research questions, a regime of water management which has a treaty is not more likely to cooperate. Cooperation is fostered by many factors. This chapter has highlighted the need for more rules in the regime and especially the fostering of cooperation not because of the existence of rules but because of the desire to cooperate as riparians develop, through practice, some norms and principles which they naturally abide by. This explains that the answer to the last research question in the context of this chapter would be that indeed the regime theory can help in explaining state cooperation

and can enhance understanding interstate water co-operation in the context of the Okavango River Basin.

This success of the Regime Theory will work better in explaining cooperation especially if it has developed rules regarding water sharing. Based on this understanding rules can be formulated to achieve transboundary water equity in the Basin. That justifies the framework developed in Annexure A which is based on other regime systems and others mentioned throughout this dissertation without detailed coverage.

What explains that there is no regime yet in Okavango is that cooperation has happened on an *ad hoc* basis rather than on an overarching desire to cooperate, In other words, there is no 'culture of cooperation' in the Basin. In fact, as the water events covered above show, the riparians are actually in a state of mistrust and are 'in a habit' of by-passing OKACOM, their own creation which could advise them technically on 'how to cooperate' thus creating a culture of cooperation. Once a culture of cooperation has been created the states would have moved towards the creation of a water regime.

Connected to the Regime Theory and reflecting on the issue of power dynamics, it must be understood that Botswana seems to be trying to play the role of hegemony in the Basin by trying to set rules and trends that must be followed. The fact that Botswana is managing to 'veto' projects of at least Namibia means that it has the balance of power and is able to determine behaviour. However, there is no hegemonic stability because

Namibia as a fast growing economy is also showing its 'muscles' in so far as the Basin states' behaviours are concerned. The theory of Hegemonic Stability provides that the establishment and maintenance of an enduring international regime or institution depends on the existence of a single dominant state. In forming and maintaining a regime, such a state must possess both the capacity and importantly, the will to structure regime rules and enforce them.[663]

In this light, the clashes especially between Namibia and Botswana are an expression of the sort of 'clash of the titans' where each state is trying to create a regime by fostering hegemonic tendencies hence continued conflict. These low level water conflicts have a negative impact on OKACOM as shown in the water events considered above that sometimes this institution is side-lined on issues which it ought to have handled. Therefore, hegemonic stability is difficult to achieve when there is such a clash between Namibia and Botswana.

In light of the hegemonic relationship painted above, and as a reflection on the recommendations, to maintain stability and improve efficiency of institutions such as OKACOM, there is need for reduction or minimisation of friction among riparians. The

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[663] See Kehoane, O. 1967. 'The Theory of hegemonic Stability and Changes in International Economic Regimes 1967 – 77,' in Holsti O. et al. *Change in the International System.* Westview Press, Boulder, pp131 -162.

structure of the agreements should be such that there is limitation of one country's dependence on the other so that the other gets its equitable share of the benefits. One way of doing this is to make sure that a country has control over the works that it is dependent on. The Popa Falls situation points to this important point, Namibia was going to incur the costs of construction and control the power supply therefrom. NamPower would then cooperate with Botswana on ways of mitigating the potential effects that the delta would suffer. The same may be said of the ENWC. Related recommendations and expansion of this is found in Chapter 8 below.

6.5 The place and role of traditional communities in international water relations

The position of Botswana in water development projects starting from the SOIWDP, the ENWC and the Popa Falls were profoundly affected by the perceptions of the local communities. As the *Ngami Times* reports[664] show, the local people resident in the Okavango Delta or in general those resident in the Ngamiland area which encompasses the Delta, opposed any project which they perceived as a threat to the wellbeing of the Delta. This has had an impact on the projects of another country especially Namibia and caused the Botswana Government to accuse Angola of reducing water flow.

[664] *Ngami Times*, 2003. 'Stop Rape of Delta.' Volume 5. Number 154. 24 – 31 January 2003.

The above explains that domestic positions are important in so far as the achievement of transboundary equity is concerned because they may determine whether there will be co-operation or not. As Frey puts it: "A nation's goals in transnational water relations are usually the result of internal power processes, which may produce a set of goals that does not display the coherence, transitivity or 'rationality' assumed in many analyses of transparent national interest."[665] A lesson can be taken from what happened in the Ganga or Ganges River Basin where domestic politics in Pakistan and India could not promote cooperation at international level. The same happened between Mexico and the United States of America regarding the salinity of the Colorado River.

The traditional communities have a significant role to play in the achievement of international hydro political stability and the achievement of transboundary water equity. The Okavango Delta which Botswana has put at the centre of any debate on the development of the river by any state in the basin, is inhabited by traditional communities and tourists operation businesses. The views of these people have torpedoed Namibian Government plans and have made Angola to 'think twice' before embarking on a massive water infrastructural development in the watershed area in its territory. This is evidenced by the halting of the water development and extraction plans which are explained in this Chapter.

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[665] Frey, F. 1993. The Political Context of Conflict and Cooperation over International River Basins.' *Water International*. 1993 (18):54 – 68, p.63.

As shall be noted below, international organisations and independent research project oriented organisations have been involved in research in the Okavango River Basin. As discussed in Chapter 1 above, the principal background for socio-economic research in the Kavango Region of Namibia is the same across all three countries but the design of the research and policy recommendations was specifically adjusted to account for country-specific differences. As will be noted in Chapter 8, most of the recommendations are applicable to the whole Basin but considering the disparities between these countries, there can be some specific recommendations for each country. Below is a more detailed consideration of the research institutions and projects which have or may affect policy orientations for the riparians.

6.6 Role of Experts and Research Community in achieving transboundary water equity

There is a growing understanding that experts in the form of natural scientists, social scientists, economists and other technical experts cannot be ignored in the process of charting a way forward to achieve transboundary water equity. In the water events covered above, it is clear that the Botswana Government had to consult the IUCN when there was an opposition from the local communities regarding the implementation of the SOIWDP. The IUCN had to produce a comprehensive evaluation report which then

affected the policy of the government in implementing the project.[666] This sends a message that the role of the scientific community is important for it can affect government policy. It has to be noted on this score that these governments still have to have accurate data about the Basin before some developments have to be implemented including implementing an agreement regarding how to equitably utilise the waters. This will obviously have to be done in conjunction with the experts.[667]

Apart from those who may get government contracts to gather information such as in the case of the IUCN, there are other independent research groups which may stand as information brokers. It is clear from the water events covered above that security even in the water environment can be a social and strategic construct which is even subjectively viewed and then non-military reasoning can inspire securitisation.[668] This explains why

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[666] See Scudder, T., Manley, RE. Coley, RW, Davis, RK, Green, J, Howard, GW, Lawry, SW, Martz, D. Rogers, PP. Taylor, ARD. Turner, SD. White, GF and Wright, EP. 1993. *The IUCN Review of the Southern Okavango Integrated Water Development Project.* Gland, Switzerland: IUCN - The World Conservation Union.

[667] *Ibid*.

[668] See remarks in Scudder T. 2003. 'Botswana's Southern Okavango Integrated Water Development Project and Hydro-Québec's Grande Baleine Project.' available at: http://www.hss.caltech.edu/~tzs/Okavango%20&%20Hydro-Quebec%20Cases.pdf last accessed 12 July 2012.

the information gathering and sharing Protocol has not gathered momentum at all – there is a tendency in the management of transboundary rivers of countries monopolising strategic knowledge, to a sense of sheer vulnerability down to sheer embarrassment because information is incomplete, ill understood, disorganised or inaccessible, which can breed distrust and hostility among Riparians in the Okavango River Basin as shown above. [669]

Against the foregoing, it is notable that special projects such as the Future Okavango have a potential of directing policies in the three countries. Part of this notable project relevant especially to this research analyses the influence of existing economic, legal, and social institutions on individual or collective action in the Ecosystem service(s) and function(s) (ESF&S) in land, forest, pasture, wildlife, and water management in the Okavango Basin. In a second step, the project directs policy making to the riparians in that it develops and tests economic and legal mechanisms that help to improve governance in the Okavango River Basin. Most importantly, the project also derives policy implications for the

[669] Jaroen, FW. And Meissner, R. 2008. 'The Politics of Security in the Okavango River Basin: From Civil War to Saving Wetlands (1975 – 2002) – A preliminary security Assessment,' in Pachova NI, Nakayama, M. and Jansky, L. 2008. *International Water Security: Domestic Treats and Opportunities.* United Nations University press. Tokyo, pp252- 295, at p.254.

practical implementation of these ESF&S-friendly institutions. In its first Report it is stated that part of the TFO project:

> …focuses on the effects of economic, legal and social institutions on individual and collective action in the provision of ESF&S in the Okavango Basin. The impact of these institutions is studied at three levels. At the household to local level social institutions influencing the management and facilitating the adoption of ES friendly innovations are identified. At the local to national level specific attention is put on how collective action between resource users, as well as on how customary and statutory law influence the incentives for ESF&S-friendly land management. At the transnational level the cooperation initiatives between Angola, Botswana and Namibia (e. g. in connection to OKACOM) as well as international regimes and laws are examined. Finally, the overarching political economy of providing multi-layer ES-governance systems from a local to a transboundary level is analysed based on the IAD-framework. [670]

This shows a clear multi-disciplinary and multi-dimensional way of dealing with issues that have great policy implications and indeed the three governments would need to take

[670] The Future Okavango (TFO) Project. 2011. *The Future Okavango Report, 2011*. The Future Okavango Project, University of Hamburg, Hamburg: Germany, p.28

heed of the scientific studies that have to be considered by the governments in all the riparian countries. This Dissertation is one such scientific piece coming out of the TFO endeavours and it has provided "a comprehensive analysis of the international and national legal water regime of the Okavango Basin"[671] and actually went beyond that to provide what this chapter has done so far and the next chapters will carry over, giving more insights on various aspects.

Chapter 8 will provide a comprehensive 'way forward' for the Okavango River Basin by offering policy recommendations and tools to support stakeholders in establishing a more ESF and S-oriented social, economic, and legal environment. This would develop stakeholder's capacity to independently assess, initiate and implement institutional change. However, socio-economic and politician situations on local to transboundary levels are different in the riparian states. Thus, recommendations in Chapter 8 have to be contextualised if the situation is not made clear.

There are also various other scientific research institutions and organisations which are providing information to the riparians states and are not to be ignored. The IUCN as a consultative body has already been noted. The Green Cross International (GCI) has also undertaken a number of research projects involving natural and social science researchers. The GCI projects are implemented in line with UNESCO's programmes and

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[671] *Ibid*.

their main rationale is to contribute to the social integration of a marginalised state. The GCI project in this light views Angola as a marginalised state thus it wants to promote its integration into the major water projects between Namibia and Botswana as the water events above show. Further, the GCI project sees to it that there is more involvement of civil society in the governmental projects through OKACOM.[672] It is clear from the project that the involvement of Green Cross International in international river courses including the Okavango River Basin is one endeavour to ensure sustainable and equitable water resources sharing and that is viewed by the GCI as a level of cohesion in the Basin.

Another project to note here is the one by the Water Ecosystems Resources in Regional Development (WERRD) Project. This project runs in conjunction with the GCI project dealt with above. The project aims at increasing the understanding of the precondition for improved livelihoods of people living in different parts of the Okavango River Basin without compromising essential environmental concerns, and to elevate relevant policies concerning land and water. The Project says that "Apart from policies within the national

[672] See Turton, A. and Earle, A. 2003. 'Project Report April 2002 – March 2003.' In *Green Cross International Okavango project: A Component of the GCI Water for Peace Project*. Geneva, GCI, p.2.

entities, the attempts to formulate and assist the execution of basin-wide policies are of key interest."[673]

6.7 Democracy explains cooperation? The International Democratic Peace Theory

The Democratic Peace Theory holds that democracies rarely, if at all, fight one another; if a democracy goes to war, it only does so in response to the aggressions of non-democracies.[674] If Angola, Botswana and Namibia are democracies, does it mean that they will not conflict or fight over the water in the Okavango River Basin? This question will help in understanding the cooperative dynamics in the Okavango River Basin thus a reflection on the relevance of the Regime Theory.

Under the fundamental assumption of the theory, it is reasoned that if the world is saturated with democracies, there will be no war but peace and cooperation,[675] including

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[673] Lundqvist, J. 2002. *Water and Ecosystem Resources in Regional Development – Balancing Societal Needs and Wants and Natural Resources Systems Sustainability in International River Basin System – Technical Annex*. Linkoping, Sweden.

[674] Gleditsch, 1997, *supra*, p101.

[675] See generally Singer, M. Wildavsky, A. 1993. *The Real World Order: Zones of Peace / Zones of Turmoil*. Chatham, NJ: Chatham House. Fukuyama, F. 1992. *The End of History and the Last Man* . New York: The Free Press. Gat, A. 2006. *War in Human Civilization*. New York: Oxford University Press.

cooperation over water resources. The theory, therefore, focuses on promoting democracy, which especially the Western World believes is the most powerful political ideology on the face of the earth.

> Moreover, they believe that the word divides into good states and bad states, and that the democracies are the white hats. Democracies have benign motives and are naturally inclined to act peacefully toward other states. Democracies only act in a bellicose fashion when the black hats, invariably non-democratic states, leave them no choice.[676]

Democracy thus offers optimism in so far as cooperation in international river basins is concerned. This is because in a democracy, internally as well as externally, actors with shared water resources have been able to work out collaborative practices for their use of water, frequently bolstered by legal agreements and the establishment of institutions. Thus, Gleditsch says:

> The trend away from confrontations and toward accommodation has been supported by a general movement in international law towards recognising the rights of all riparians states as well as downstream countries… shared democracy has not been a necessary condition for avoiding military conflict over water, whether in Europe or in the Middle East or the Indian subcontinent. Clearly many authoritarian and semi

[676] *Ibid*.

> authoritarian countries have also been able to adjust to a pattern of domestic and international accommodation in order to avoid the escalation of water conflicts.[677]

However, the studies of water conflicts as illuminated in the literature review in Chapter 3 above emphasise precisely the kind of factors which are, in turn, strengthened by democratisation. It is illustrated below that this is very possible, especially with international water regimes and institutions created under some binding legal instruments, including those instruments on international environmental law binding on the riparians on top of the water agreement. In this light it can be said that the Democratic Theory cannot fully support the idea that where there is democracy there will be cooperation.

The theory has also come under attack from international relations scholars who say that the *non causa pro causa* that underpin Democratic Peace Theory cannot explain why democracies remain at peace with one another because the mechanisms that make up this principle do not operate as stipulated by the theory's proponents. "In the case of the normative logic, liberal democracies do not reliably externalize their domestic norms of

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[677] Gledtsch, NP. 1997. Conflict and the Environment. Kluwer Akademic Publishers. Dordrecht. The Netherlands. See also Gleditsch, NP and Sverdrup, BO. 1996. *Democracy and the Environment.* Paper presented to the Fourth National Conference in political Science, Geilo 8-9 January 1996.

conflict resolution and do not treat one another with trust and respect when their interests clash."[678] This is true of what obtains in the Okavango River Basin where the three democracies do not trust each other and their officials even confirm that.

These attacks and many other ones cause one to conclude that just as statistical studies of the democratic peace have concluded that shared democracy is not a 'necessary' condition for developing cooperative behaviours, and avoiding war generally, democracy is not a necessary condition for constructive behaviour on water issues.[679] However, shared democracy in water governance appears to be 'sufficient' condition for water peace, and increasing democratisation seems likely to put the collaborative arrangement between riparians and their water institutions in a more solid foundation.[680]

6.8 Summary

This chapter has explored the concept of transboundary water relations under the rubric 'international water relations' as it should actually be called. This field of international law has not been adequately considered in literature and research and thus there is scant literature where there is a specific theory of international water relations. Most authors have theorised on international relations in general and have considered international

[678] *Ibid*

[679] Gleditsch, NP. 1997, *supra*, note 677, p.101.

[680] *Ibid*.

politics in particular thus international politics specifically related to water has been lacking.

Be that as it may, this chapter has come up with conclusions which are relevant to the research questions under consideration in that it has concluded that in the light of the water events considered herein, the signing of the water agreements on the use and management of the Okavango River Basin has not necessarily led to cooperation. The conflicts exist and at times as has been shown above, OKACOM itself is side-lined or is consulted when it is to the convenience of the riparians. Further and in the light of the water events presented including cases considered above, it is clear that a previous water event including the ones considered above does not necessarily lead to treaty signing and in the case of OKACOM; it was not necessitated by water events. What necessitated OKACOM are the drivers considered above, the politics at play as shown in this chapter and also other factors which have been considered in the preceding chapters above.

On the understanding of the foregoing, this chapter has been key in this dissertation in that it illustrates or gives pointers to the effect that a regime of water management which has a treaty is not necessarily going to cooperate. The chapter indicated that cooperation is fostered by many factors including the need for more rules in the regime and especially the fostering of cooperation not because of the existence of rules, but because of the desire to cooperate as riparians develop, through practice, some norms and principles which

they naturally abide by – cooperating in a regime system – one which is not yet in existence in the Okavango River Basin.

In the Okavango River Basin, cooperation has largely happened on an *ad hoc* basis rather than on an overarching desire to cooperate. In other words, there was no 'culture of cooperation' in the Basin. Further, there was no hegemonic stability because Botswana was challenger of Namibian proposals for water development or at least disagreeing with Namibia or *vice-versa*, whichever is the preferred analysis. Nevertheless, although Botswana policy or at least attitude towards Namibian projects was negative Namibia as a fast growing economy was also "flexing" its 'muscles' in so far as the basin states' behaviours are concerned. In this light and relevant to the research questions, it can be deciphered through the water events covered in this chapter that the Regime Theory would work better in explaining cooperation especially if it has developed rules regarding water sharing. Based on this understanding, rules can be formulated to achieve transboundary water equity in the Basin. That justifies the framework developed in Annexure A.

Chapter 7

In and out of OKACOM: Decoding the Drivers, Organisational Principles and Functionality of OKACOM

7.1. Introduction

There is an Agreement between the Governments of the Republic of Angola, the Republic of Botswana and the Republic of Namibia on the establishment of a Permanent Okavango River Basin Water Commission (OKACOM Agreement). This chapter endeavours to analyse the major goals and interests which led to the formation of OKACOM. These goals and interests, otherwise known as 'drivers', are distinguished from the actors who attempt to realise these goals or interests.

The chapter recognises that as long as there have been countries sharing water, there will always be disputes over how the water has been shared – disputes or potential conflict is inherent in any situation where states have to share a common resource such as a river which straddles their borders. In this light the chapter seeks answers to the question whether the signing of the water agreements on the use and management of Okavango waters has led to potential conflict or cooperation potential. This will be done through an investigation of the relationship between water-related events and the signing of treaties, hence a consideration of the research questions.

To this end this chapter gives most of the answers to the overall question regarding whether the OKACOM Agreement can be taken as an instrument of inter and intra-state conflict or co-operation.

With this understanding, the chapter highlights answers to the question whether the inclusion of equitable language in transboundary water management and allocation Agreements really makes a practical difference in transboundary water law at the basin level with specific reference to the Okavango River Basin.

7.2. Background to the Formation of OKACOM

Having looked briefly at OKACOM above, it is appropriate to undertake some deeper analysis of the content or substance of the Agreement, deciphering the complexities behind its formation and various discourses at play. Before looking at substantive provisions of the Agreement, it is imperative to consider the geography of Angola, Botswana and Namibia, the countries which share the Okavango River Basin. In order to understand the drivers behind the creation of OKACOM, it is imperative to have a general geographical and hydrological outlook of the Okavango River Basin. This background provides a general framework to the drivers to the Agreement and drives towards the answer to the first and second sub questions stated above.

7.2.1 The Geography and hydrology of the Okavango River Basin

In order to understand the drivers of the OKACOM Agreement and the rationale behind its contents, it is important to consider the geography and hydrology of the Basin that the Agreement applies to. This is because it is this hydrology and geography coupled with the applicable principles of international water law that inform the decisions of the three riparians to include what is in the Agreement.

On the above backdrop, the Okavango River is unique in that it is one of the few endoergic rivers in the world and is the largest of such rivers in Southern Africa. The river originates from the southern Angolan highlands and flows for about 600km southwards from its catchment area before reaching the border with Namibia where it forms the border between the two countries for a distance of about 400km. When it reaches the border it turns and flows in the eastern direction and turns and flows in the southern direction again crossing Namibia and going into Botswana where it discharges in an inland delta named the Okavango Delta.

In Angola and Namibia there were virtually no artificial features or developments on the river. Angola had good physical terrain to build storage infrastructure such as dams but it had not done so. Plans were there to develop the River in Angola but there had been resistance from Botswana. This issue is dealt with in more detail below in Chapter 6 which considers the politics affecting the management of the water resources in the Basin. Although the river straddles along and across Namibia for a length of more than 400km,

the natural terrain is generally flat making it difficult to build structures such as dams across the river – only where the river crossed Caprivi Strip was there a plan to build a dam which again has been resisted by Botswana. All the three countries had also not used the water for large scale projects such as irrigation. This means that the river was nearly pristine.

The major tributary of the Okavango River in Angola is the Rio Cuito, and the total basin area is approximately 120 000km,^{2} the larger percentage of this is found in Angola which is a water abundant country and it supplies more than 90% of the water into the River and eventually into the Okavango Delta.[681] The Delta is a Ramsar Site of international importance which covers about 5 000 km.^{2}

This means that most of the water that flows into the delta is exposed to a high surface area for evaporation thus most of the water is lost through evaporation. Some of the water which flows into the Delta, further drains into the Makgadikgadi system where it meets the water from the Nata River which originates in Western Zimbabwe. The Diagram below shows the Okavango River Basin.

[681] Green Cross International 2003, *supra*.

Figure 8: Aerial depiction of the Badin and the Delta

The mean annual runoff at the mouth of the Okavango River is 11,000,000 cubic meters per annum. In Botswana Water inflow to the Okavango Delta ranges from 7,000,000 to 15,000,000 cubic meters and averages 10,000,000 cubic meters per annum.[682] As already

[682] Hitchcock, RK. 2010. 'Water Resource Use and Management in the Okavango System of Southern Africa: The Political Economy of State, Community and Private

noted above, the bulk of this inflow (97%) is lost to evapotranspiration and seepage. The long-term outflow of the Delta is estimated to range from 253-345 MCM/year.[683]

The Okavango Delta, the largest of its kind in Africa, is considered to be highly significant, both from the standpoint of its geomorphology and hydrology and its biological richness. Not only does it contain over 1,100 different species of plants and 65-70 species of fish, but it also supports a wide variety of large and small faunal species, some of which, including the *sitatunga* (*Tragelaphus spekei*) are rare. [684] The archaeological and historical records indicate long-standing human use.[685]

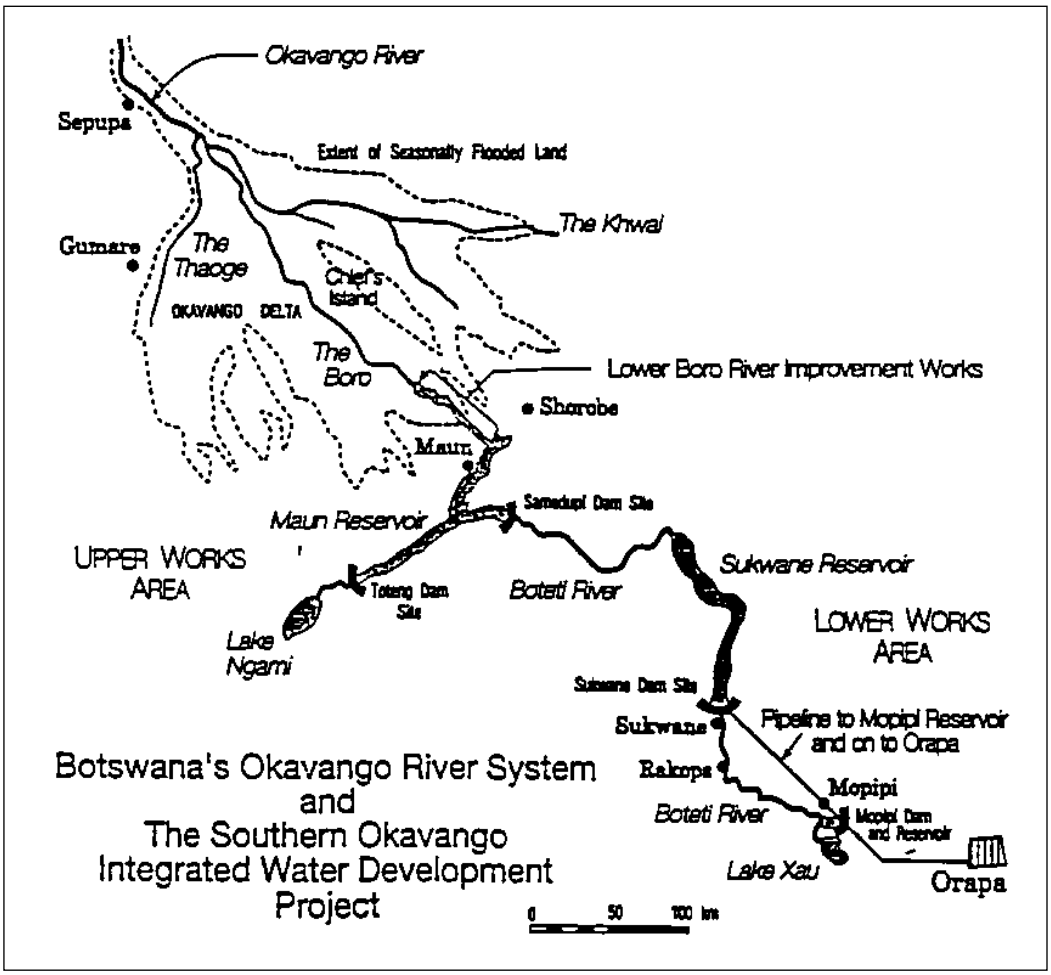
Resource Control', available at http://www.africanwater.org/hitchcockdoc1.htm. Last accessed, 28, 2011.

[683] Scudder et al. 1993, *supra*. Note 643, p.7

[684] Campbell, AC. 1976. 'Traditional Utilization of the Okavango Delta.' Botswana Society, (Ed). 1976. *Proceedings of the Symposium on the Okavango Delta and Its Future Utilization*, Gaborone: Botswana Society, pp. 163-173.

[685] *Ibid*.

Figure 9: the Okavango Delta



Source: Hitchkock 2010.[686]

[686] Hitchcock, 2010, *supra*.

7.2.2 Drivers to the Agreement and underlying motivations

The histories of the countries as outlined in Chapter 4 above have a great deal of impact on the conclusion of the OKACOM Agreement. All the countries are obviously subject to the norms of international law including international water treaties to which they accede to. In this light the existence of the OKACOM Agreement is a result of internal and external drivers. These drivers will now be examined below.

7.3 Internal drivers

Internal drivers are those goals or objectives which can be extracted from the Agreement. These show a general orientation and thinking of the parties to the Agreement at the time they concluded it. They show, also, the thinking about future plans and expectations and what goals and objectives the parties had as part of the long term plan. A critical analysis of the historical and current happenings in the three member states to the Permanent Okavango River Basin Water Commission (OKACOM) Agreement shows that the formation of the Commission was actuated internally by mainly the need for joint management, the need for water development, and considerations of environmental sustainability. These drivers as shall be made clearer below are interrelated and often overlap but will be considered separately.

7.3.1 The need for joint management

Joint management of environmental resources is not possible where the parties concerned are divided or are involved in conflict. This explains why the state parties to the

OKACOM Agreement only managed to conclude the Agreement in 1994 when all the states were enjoying relative calm in their territories with the exception of Angola which still had the threat of insurgency in its territory which ended in 2002 as explained in Chapter 4 above.

There is (inclusion of) language in the OKACOM Agreement which shows a general inclination towards cooperation especially through joint management of the resources in the Okavango River Basin. The need for joint management is well emphasised in the Preamble to the OKACOM Agreement where the states reiterate the need for "cooperation between the contracting parties"[687] and the need for such especially in the "judicious development of joint projects in respect of the water resources of common interest"[688] in the Okavango River Basin. To facilitate these objectives, the State Parties established OKACOM. To further cooperation through joint management of the Commission there is a technical advisor to the State Parties "on matters relating to the conservation, development and utilisation of water resources of common interest"[689] to

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[687] Paragraph 2 of the Preamble to the Agreement between the Governments of the Republic of Angola, the Republic of Botswana and the Republic of Namibia on the Establishment of a Permanent Okavango River Basin Water Commission, 1994 (OKACOM).

[688] *Ibid* paragraph 7.

[689] Article 1.2 of the OKACOM Agreement.

the three states. In doing so, the Commission will be ensuring joint management of the resources under the OKACOM Agreement and other Agreements which may be entered into by the state parties.

In order for the Commission to fully execute its mandate in advising the State Parties in matters related to joint management, the Commission is empowered to contract consultants to do research, gather information and process it to the benefit of the member states.[690] The information can also guide the Commission in so far as its contractual technical advice to the State Parties is concerned and such information should be in the form of an official report of the Commission which will contain estimates of costs of implementing the advice.[691]

To further ensure cooperation and joint management, the Commission is also enjoined to consider the party's interests when deliberating on the matters affecting its mandate. In fact, the Commission consists of all the three member states, meaning that the member states have to consider each other's views in the implementation of the projects in the Basin. This point will become crucial in the consideration of the politics that affect the management of the water resources in the Basin as has been shown in Chapter 6 above.

[690] Article 5.1 of the OKACOM Agreement.

[691] Article 5.2 of the OKACOM Agreement.

This politics actually affects the functionality of the Commission at times and implies that the mere inclusion of the language of co-operation does not necessarily mean the factual existence of cooperation since there are other factors at play. Further, it is not correct to say that a previous water event such as management or utilisation conflict leads to treaty signing but, riparians with a water treaty are more likely to be cooperative depending on the nature and structure of the Agreement as shall be made clearer under the consideration of other drivers below.

7.3.2 Water development

The contracting parties saw the need for water development for the betterment of their populations. To implement this vision, the Commission was tasked to "investigate, separately or jointly by the contracting parties, related to the development of any water resources in the Okavango River Basin, including the construction, operation and maintenance of any water works in connection therewith."[692] Therefore, the Commission is empowered to encourage the construction of hydraulic infrastructure for water development along the Okavango River. Therefore, the Commission can come up with proposals and a master plan for the development of water resources in the Okavango River Basin such as the construction of dams in Angola where the natural terrain is conducive for that. However, these plans or proposals are sometimes opposed by the other states for several reasons.

[692] Article 4.4 of the OKACOM Agreement.

The development of water also includes action by one of the State Parties to alleviate short term difficulties resulting from water shortages in the Okavango River Basin. This shortage normally happens during periods of drought, so consideration should be taken with regards to the availability of water which may be stored in dams and the water requirement within the territories of the respective parties at the time in terms of Article 4.4 of the OKACOM Agreement.[693] This Article, however, has been paralysed when it comes to other projects.

A general reading of the Agreement shows a move towards integrated water management. The concept of integrated water management fits well into the water management framework of the OKACOM Agreement. Worldwide, in the last few decades, the shift from fortress conservation to a more 'people-centred' approach has been well documented and has spawned a plethora of policies and programs. These new programmes included community based conservation (CBC), community wildlife management (CWM), community-based natural resource management (CBNRM), collaborative or joint management (JM) already dealt with above, and integrated conservation and development programmes (ICDPs).[694] These people-centred

[693] Article 4.6 of the OKACOM Agreement.

[694] Brown, M. and Wyckoff-Baird, B. 1992. *Designing Integrated Conservation and Development Projects*. Washington, D.C.: Biodiversity Support Program; see

approaches have varied greatly in level of participation, and can be analysed using Arnstein and Sherry's ladder of citizen participation in decision making processes, where a recommendation is made on how OKACOM can enhance public participation by involving local communities.[695]

As a reflection of those recommendations in order to achieve this vision at transboundary level, especially under the OKACOM Agreement, decisions must be made about allocation mechanisms and conservation of water that are compatible with societal objectives such as economic efficiency, sustainability and the equity imperative.[696] This

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generally Western, D. and RM. Wright, (eds). 1994. *Natural Connections: Perspectives in Community-Based Conservation*. Covelo, California: Island Press; Adams, W.M. and Hulme, D. 2001. 'If Community Conservation is the Answer in Africa, What is the Question?' *Oryx* 35(3):193-200.

[695] Arnstein, SR. 1969. 'A Ladder of Citizen Participation'. Journal of the American Institute of Planners, 35 (4)1969, pp.216-224. See also Furlong, K. 2004: 'Building Regimes from the Top-Down: Shared Watercourses in the Southern African Development Community.' Paper presented at the 45th Convention of the International Studies Association, Montreal, Canada, 17–20 March 2004.

[696] Bock, B. and Kirk, M. 2006. 'Rural water pricing systems in Namibia: Effects on water use and Livelihoods'. *Quarterly Journal of International Agriculture* 45(4): 339-360.

explains why Falk, and others say:

> Calls for new paradigms in water resource management have emerged from a broad range of commentators over the past decade. These calls arose as it became increasingly clear that the pressing problems in water resource management have to be tackled from an integrated polycentric perspective, taking into account interdependent economic, societal, environmental, institutional and technological factors.[697]

As has been shown in Chapter 4, the 2004 Namibian Act provides an integrated enabling legislative framework within which Namibia's water resources can be managed, and water services can be provided. This aids in achieving the objectives of the OKACOM Agreement. Angola also comes closer with its laws but Botswana was still a distance behind in terms of achieving this at local level even though it had bound itself to a number of international instruments in this context.

These disparities in terms of the level of incorporation of international norms into local legislation shows that the mere inclusion of equitable language or cooperative language in the OKACOM Agreement does not necessarily mean that cooperation will exist and these disparities in national legislation has significant negative impacts on transboundary

[697] Falk, Bock, Kirk, 2009, *supra,* p 115.

water equity. However, riparians with a water treaty are more likely to be cooperative depending on the nature and structure of the Agreement as shall be made clearer below.

7.3.3 Environmental concerns and sustainable development

Environmental concerns are also an internal driver to the formation of the OKACOM. In terms of the OKACOM Agreement, the Commission's mandate emanates from the shared vision of the three states that are concerned about the reduction of practices that are not environmentally friendly and the minimisation of unsustainable activities that affect the resources of the Okavango basin system. The vision is supported by operational principles of equitable allocation, sustainable utilisation, sound environmental management and sharing of benefits. To this end, the OKACOM Agreement gives it responsibility to:

a) Determine the long term safe yield of the river basin;
b) Estimate reasonable demand from the consumers;
c) Prepare criteria for conservation, equitable allocation and sustainable utilisation of water;
d) Conduct investigations related to water infrastructure;
e) Recommend pollution prevention measures;
f) Develop measures for the alleviation of short term difficulties, such as temporary droughts; and

g) Address other matters determined by the Commission.[698]

Therefore, the OKACOM Agreement enjoins the State Parties to promote and ensure organised and coordinated and environmentally sustainable regional water resources development, while at the same time not negating the needs of the individual states. This means that the states were actually driven by the thought of ensuring environmental equity in the management of Okavango River Basin Resources. But does this necessarily translate into practice? The answer at this juncture seems to be a clear 'no' because of the reasons given herein already above and more to be explained below.

Indeed, at the formation of OKACOM there were environmental concerns as drivers to the process. A general reading of the OKACOM Agreement shows that environmental concerns have the 'right to water' as an embedded principle in them. The OKACOM Agreement is couched in language which points to the fact that the states should ensure that there is access to water in the Okavango River by the concerned citizenry of the three countries but without compromising the economic interests of any of the states. Botswana, for example, which has been jealously guarding against the Okavango Delta uses the property rights of the residents of the delta area as one of the reasons why Namibia or Angola cannot develop the river yet at the same time within her own territory

[698] OKACOM, 2011. *The Permanent Okavango River Basin Water Commission.* Available at: http://www.okacom.org/okacom.htm . Last Accessed 13 August 2011.

laws trump community property rights. One may argue that this hegemonic behaviour indicates that the mere inclusion of language or terms in an agreement will not mean achievement of cooperation, let alone transboundary water equity.

Further, looking at the holistic picture of the interactions among riparians one can say that the trumping of community property rights means that the states are following a positivistic stance towards property rights implementation. These basin property rights include the right to public participation by the concerned citizens of the three countries in the decision making processes of OKACOM and other structures of the Commission that affect them.[699]

The Agreement mentions the local communities' rights to water though. This is a welcome position of the Agreement since the human right to water is also recognised in

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[699] Similar sentiments are found in Okoth, S. 2009. A 'Seat at the Table': *Exploring the Relationship between Pluralistic Structures and Involvement in Decision-Making. The Case of the Nile Basin initiative.* Virginia Commonwealth University. Ph.D. Dissertation.

the United Nations Convention on the Law of Non-Navigational Uses of Watercourses[700] whose provisions are recognised and incorporated by reference in the Preamble to the OKACOM Agreement. The SADC Protocol on Shared Water Course Systems of 1995[701] emphasises equitable utilisation of shared water courses applying existing customary international law and community interest taking into account, among other things, the environmental, social and economic needs and the impact of intended uses of the water course.[702]

With all these aspects in mind, the signatories to the OKACOM Agreement found it imperative to task the Commission with the responsibility to advise the State Parties on "the prevention of pollution of water resources and the control of aquatic weeds in the Okavango River Basin."[703] Further, in order to achieve sustainable water utilisation the Commission is tasked with advising the state parties with the "criteria to be adopted in the conservation, equitable allocation and sustainable utilisation of water resources in the

[700]The statement of understanding states that in determining vital human needs in the event of conflicts over the use of water courses a special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation.

[701] See Preamble, Article 2 and Artocle 3(7)(a) of the Protocol

[702] Article 2 of the OKACOM Agreement.

[703] Article 4.5 of the OKACOM Agreement.

Okavango River Basin"[704] and also advise on measures and arrangements to determine the long term safe yield of the water available from all potential water resources in the Okavango River Basin."[705] These are laudable objectives which drive the functionality of the Commission but the practice of these principles is another world needing careful analysis and such analysis will be done in the chapters below.

Important to note here is that the Commission had done very little to achieve these tasks. More relevant to this dissertation is the failure by the Commission to come up with the "criteria to be adopted in the conservation, equitable allocation and sustainable utilisation of water resources in the Okavango River Basin."[706] Tied to this is its failure at this stage to come up with an Agreement on transboundary water equity. The Commission admits its failures and gives understandable reasons by stating:

> In late 2004, OKACOM was an organization struggling to function. For ten years, it had dedicated a large effort on acquiring a Global Environment Facility (GEF) International Waters project for the basin. Initial transboundary studies were completed, and a design for the project was submitted to the GEF Secretariat for approval. Unfortunately, this consumed a significant amount of OKACOM 's time and efforts, leaving little time to develop, manage, and administer its core

[704] Article 4.3 of the OKACOM Agreement.

[705] Article 4.1 of the OKACOM Agreement.

[706] Article 4.3 of the OKACOM Agreement.

> mandate. Meetings, occurring generally once a year, were ineffective and follow-up was non-existent. Overall, the Commission failed to operate as a team.[707]

However, strides have been made in trying to settle logistical issues and it was expected that whenever these 'problems' have been settled, the Commission would achieve most of its objectives and tasks. Considering the time, however, it was unlikely for the Commission to come up with an Agreement on transboundary water equity in the Okjavango River Basin. This is why as a contribution to the efforts already made by the Commission, Annexure A was included in this Dissertation, the Commission and other experts can consider this Annexure as a working document or Draft Agreement on Transboundary Water Equity in the Okavango River Basin. Against this backdrop therefore, it is not correct to say that riparians with a water treaty are more likely to be cooperative. However as elucidated herein whether or not there will be cooperation depends on the nature and structures of the Agreement and or institutions under it hence an endeavour to close gaps by providing Annexure A and B.

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[707] USAID, SADC and OKACOM, 2009. *USAID/Southern Africa Okavango Integrated River Basin Management Project (IBRM). Final Report.* OKACOM. Gaborone, Botswana, p.51.

7.4 External Drivers to the OKACOM Agreement

African countries have to a great extent been affected by events which originate outside the continent. Globally, the policies of strong nations in terms of economic and military power have always had an impact on African politics and economics and at the same time the policies of international organisations and their agencies such as the United Nations and the Bretton Woods institutions have indeed affected the policy orientation of African nations in water resource management. These effects have had a role in the conclusion of transboundary water Agreements and the OKACOM Agreement is no exception. The major drivers which are here regarded as external include the water wars rhetoric; the global hydraulic agenda and the demographic and cultural ties which will now be considered in more detail below.

7.4.1 The 'water wars' rhetoric, strategic interests and hydro solidarity

'Water war' is a colloquial term often used to describe conflict motivated around the use or possession of water resources within a state's boundary or between two or more states. The term is often used by the media, but rarely by academics or the security community, who tend to talk about 'water-related conflicts' rather than 'wars.' The other dimensions of this scenario is that after World War II there was war over ideology – the Cold War. This was not violent, but the conflict was there. After the collapse of the socialist/communist system there were voices which predicted that the next wars will be

about resources and water was prominent in the discussion as its scarcity was viewed as a security issue.[708]

Indeed, population increases, internal migration and the environment have increasingly placed a significant burden on the state to meet its obligation of water accessibility. In this light, recognisably there is considerable talk of 'water wars,' but in fact there is little evidence of international violent conflict over water.[709] What has been evidenced is that conflicts arise as a result of social-political construction of water scarcity, called 'second order scarcity.'[710] The only reported example of an actual inter-state conflict over water is the one between the Summerian states of Lagash and Umma, taking place between 2500 and 2350 B.C.[711]

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[708] Wolf, AT. 'Water and Human Security.' J*ournal of Contemporary Water Research and Education*. 118 (1): 29 - 36, p.29.

[709] Ravnborg, H.M. 2004. *Water and Conflict– Lessons Learned and Options Available On Conflict Prevention and Resolution in Water Governance: DIIS Brief.* Copenhagen: Dansk Institut for Internationale Studier.

[710] Ibid.

[711] See Chapter 3 above and authorities therefor. Also consider Rasler, Karen A. and Thompson W.R. 2006. 'Contested Territory, Strategic Rivalries, and Conflict Escalation.' *International Studies Quarterly*. 50 (1): 145-168. p.145-168.

How then can ‘water war’ be regarded as a driver or cause to the formation of the OKACOM Agreement? It must be noted as international cases show, a wide range of conflicts over water appears throughout history, though very rarely are these ‘wars’ over water. Instead, access to water and or allocation of same has been a source of tensions, a tool during conflicts that start for other reasons, and a target during wars.[712]

> Demands on water and land in Namibia are increasing steadily as the population and the economy grow. Although only a few households can survive on subsistence agriculture alone, access to agricultural land remains central to livelihoods strategies particularly in the non-freehold or communal areas of Namibia. The importance of agriculture is not only likely to remain, but will increase to the extent that population growth continues to exceed the creation of employment opportunities.[713]

As this quotation shows, Namibia saw the imperative of concluding the Agreement because there was an increasing demand for water and Namibia wanted to tap the Okavango River to meet this demand. This plan of Namibia which has created some hydro politics analysed in Chapter 6 below is a threat to the ecology and tourism economy

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[712] Gleick, P.H. 1993. ‘Water and conflict: Fresh Water Resources and International Security.’ *International Security.* 18 (1):79-112. p.79.

[713] Werner W. 2009. ‘Controlling Access to Water and Land: *De jure* and *de facto* powers of Water Point Committees.’ *Cuve Waters Papers,* No. 5, p.1.

of the Okavango Delta Region in Botswana. Angola has not also developed the Okavango (Cubango as it is called in Angola) River and is seen as a 'sleeping giant' which if it implements a programme to irrigate or build reservoirs, will affect water flow to its two co-riparians Namibia and Botswana downstream.

The above situation shows potential conflict in the management of water resources in the Okavango River. Seeing the potential conflict, Namibia as the most arid of the three countries would be forced to see to it that a mechanism is put in place to minimise, as it were, that potential conflict. Botswana on the other hand, foreseeing the negative effects which might be had on her ecology, is encouraged to sign an Agreement which then binds the states to consult each other whenever a water development project is proposed by one member state. Angola is also encouraged to get to the negotiating table because any water development downstream may have negative effects on her as an upstream riparian and secondly, she foresees potential opposition to her long term plans to develop the Cubango River within her territory. Therefore, in other words, there is need for hydro solidarity among the nations which will then create water and environmental security.[714]

[714] For explanations of hydro solidarity as water security see in general Davidsen, PA. 2010. 'Hydrosolidarity as Water Security in the Okavango River Basin,' in Wegerich, K. and Warner, J. 2010. *The Politics of Water: A Survey*. First Edition. Rutledge. London and New York,

Indeed strategic interests have been of supreme concern in many transboundary river basins.[715] This has been a significant driver in other River Basins in Southern Africa or at least in the case studies considered. Some authors have thus introduced the concept of 'hydro solidarity'[716] when describing how a desecuritisation discourse of cooperation and benefit-sharing can coexist with a security of supply discourse as is happening between the three riparians as the following chapters will explain in detail.

The above-mentioned drivers are thus very relevant to the conclusion of the OKACOM Agreement. The Agreement has several provisions which reflect this external driver such as the need to share information, need for public participation, the need for consultation among the states and of course, the formation of a transboundary water Commission OKACOM itself which holistically looked at is a 'shock' absorber whenever states differ in plans and opinion on the utilisation of the of the waters in the Okavango River Basin.

To this end, the formation of the Joint Commission is seen as a way of minimising the potential conflict by most neo-Malthusians who have constantly spread the message of 'water wars'. The question will be considered in detail regarding the veracity of this

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[715] Turton, A. 2008. "The Southern African Hydropolitical Complex," in Varis, O. Tortaradja, C and Biswas, AK. 2008. *Management of Transboundary Rivers and Lakes*. Springer-Verlag. Berlin. Hidelberg, pp21 – 79.

[716] *Ibid*.

assertion by authors. The water wars rhetoric is vehemently refuted and this has given rise to three theories being the Oregon School, The Maryland School and the Oslo School which have already been considered above.[717]

7.4.2 Geography geopolitics and hegemonic stability

Why do states really spend time and resources in coming up with an agreement to manage the utilisation of the resources in a given river basin? This question can be well understood upon gaining an understanding of the geopolitics and hegemonic tendencies of states involved. A river which straddles international boundaries is likely to create problems for the concerned countries and is likely to cause asymmetric power relations in terms of who has greater sway in what should be done. Therefore, the positions of the countries determine where, how and when the developments in such rivers can be had and used by the riparian.

Further, the fact that the Okavango River forms an international border and terminates in the territory of another creating a unique ecosystem in the middle of a desert creates different geopolitical relations between and among the riparians and that creates potential conflict and at the same time provides an incentive for co-operation. These combined become a driver for an agreement which is the OKACOM Agreement.

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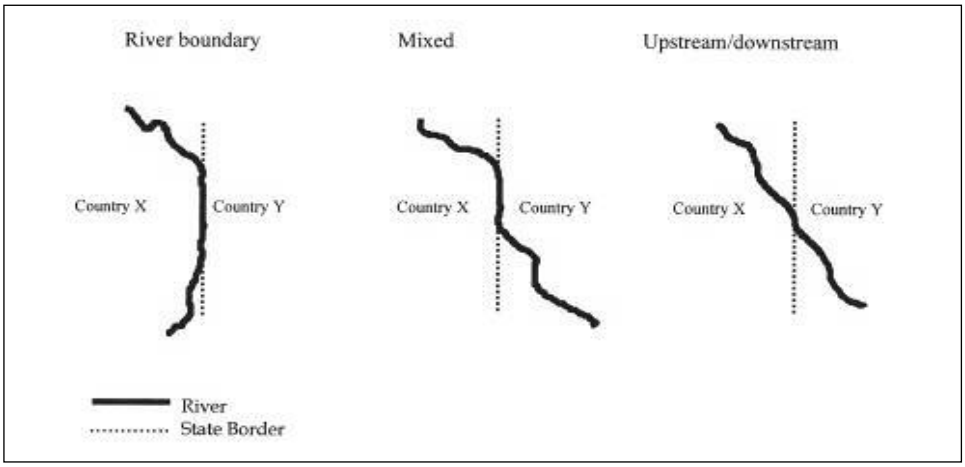
[717] *Ibid*

To further explain the point here, the position of the Okavango as first originating in one country where most of the tributaries are, further creating a border over a long stretch crossing one country and terminating in the other makes it both a ‘through-border’ and ‘border creator’ – the mixed configuration - a complicated symmetry in river formations which in turn create difficult hydro political situations.

Figure 10: River Configurations



With this mixed configuration of the Okavango River System, the three riparians saw the need to have an agreement because the upstream/downstream relationship in ‘mixed’

configurations is the most conflict prone.[718] In this context the agreement provides a platform for co-operation and consensus building and to off-set the imbalances which geography naturally brings about. However, this balance has not been achieved yet or will be difficult if not impossible to achieve since hydro politics seems to trump the agreement under the circumstances.

The above positions explain that it is not correct to say that riparians with a water treaty are more likely to be co-operative. The agreement can have its language but geography and geopolitics can play a more decisive role with political tools being the most stumbling blocks. Mutual mistrust or suspicion coupled with egoistic and hegemonic attitudes prompted by environmental, social and water insecurity concerns spin the wheel when it comes to transboundary water management. Thus, as elucidated herein co-operation depends on the nature and structures of the Agreement and/or institutions under it hence an endeavour to close the gaps by providing Annexure A and B.

A breakdown of the configuration of the river shows that there might be different levels of cooperation between riparians. It can be seen, or at least deduced from the diagram above, that the relationship between different river geographies and the potential conflict

[718] For explanations of 'mixed' river configurations as the most common conflict prone see Toset, H P W; Gleditsch N P & Hegre, H. 2000. 'Shared Rivers and Interstate Conflict', *Political Geography*. 19(6): 971–996.

and cooperation over a shared river course is determined mainly by the relative positions of the riparians. In this light, where the river is contiguous, meaning that it creates a border between states, there is incentive for cooperation and where the river is “through border” there is more potential for conflict. This means that there is potential for cooperation between Angola and Namibia and there is more potential conflict between Namibia and Botswana.

The relationships among the three countries are intertwined and explain the hegemonic stability theory which asserts that a relatively open and stable international system is most likely when there is a single dominant or hegemonic state that has a sufficient large share of resources that it is able to provide leadership, is willing to pursue policies necessary to create and maintain a liberal economic order. Further, the hegemony must follow policies that other major actors believe are relatively beneficial.

7.4.3 The global hydraulic and environmental agenda

The historical development of the law of international watercourses shown in Chapter 4 above indicates that water became an increasingly important aspect to consider since the 1960s. This constant featuring of water and water related agenda points to high profile meetings and fora necessitated by a situation across the world whereby nations and organisations had to think about their hydraulic mission and hydrocracy. Wester defines the hydraulic mission as:

> The strong conviction that every drop of water flowing to the ocean is a waste and that the state should develop hydraulic infrastructure to capture as much water as possible for human uses. The carrier of this mission is the hydrocracy, which sets out to control nature and 'conquer the desert' by 'developing' water resources for the sake of progress and development. [719]

These concepts are central to how Angola, Botswana and Namibia decided to conclude the OKACOM Agreement. Although the hydraulic mission is not a phenomenon of the 20th century it held sway in the formation of the Commission after the independence of Namibia and during a period of relative calm in Angola after the Ceasefire Agreement of 1992.

Botswana and Namibia especially had a strong conviction to control the River and 'conquer the desert' by 'developing' water resources for the sake of economic progress and development. Namibia had a plan to erect an Eastern Water carrier pumping water from the Okavango River to the interior cities including Windhoek. Botswana had similar plans before where it could pipe water from the Okavango Delta to rural and urban

[719] Wester, P. 2008. 'Shedding the waters: institutional change and water control in the Lerma–Chapala Basin.' Mexico, Unpublished PhD dissertation, Wageningen University, Wageningen, The Netherlands, p.10.

communities further inside her territory. The plan was shelved amidst protests within and without the country. Angola is not to be left behind, with more than 90% of water flowing into the Okavango River coming from within her territory. The country sees the need for water development in the form of reservoirs which can boost agriculture and other sectoral developments.

There is tremendous legal support for the hydraulic mission as the global hydraulic agendas show. The Preamble to the OKACOM Agreement refers to a number of instruments which carry support for the hydraulic agendas of the three State Parties to the Agreement. The Preamble refers to the "provisions of Agenda 21 of the United Nations Conference on Environment and Development held at Rio de Janeiro in June 1992"[720] and the "Helsinki Rules on the use of waters of international rivers as approved at the 52nd Conference of the International Law Association in 1966."[721]

The Helsinki Rules were dealt with in detail at various points in the preceding chapters, thus it is imperative to mention that Agenda 21was the major document which was produced out of the Rio Conference. It dealt mainly with environmental aspects including resource degradation, sustainable development and aid to developing countries such as member states to the OKACOM Agreement. Further Agenda 21 attempts to achieve

[720] Paragraph 5 of the Preamble to the OKACOM Agreement.

[721] Paragraph 6 of the Preamble to the OKACOM Agreement

equilibrium between economic development and environmental sustainability by ensuring that "the system of incentives and penalties which motivate economic behaviour must be re-oriented to become a strong force for sustainability."[722] This is achieved by *inter alia*, conservation of freshwater resources and any other resources or ecological aspects dependent on marine ecology.

Therefore Angola, Botswana and Namibia, in terms of international environmental law have to make sure that how they deal with resources in the Okavango River Basin meets the expectations of the Rio Conference. This is seen to have informed the OKACOM Agreement and to facilitate the process of conservation. They have sought multiple financial resource organisations including the Global Environmental Facility[723] to finance some of the observation and research projects they undertake in the Okavango River Basin.[724] In this light, the global hydraulic agenda remains central to the formation of the OKACOM Agreement. The challenge is to actualise the language of these agendas and

[722] Agenda 21 of the United Nations Conference on Environment and Development, Rio De Janeiro, 1992.

[723]In 1991, the World Bank, UNEP and the United Nations Development Programme established the Global Environmental Facility to provide financial resources to support projects which benefited the global commons.

[724] USAID, SADC and OKACOM, 2009, *supra*. p.51.

international laws in the real management and governance of resources in the Okavango River Basin.

7.5. The Contents of the OKACOM Agreement

The salient principles relating to transboundary water equity will now be dealt with and analysed in the context of the drivers dealt with above and the analysis will be done in the context of the three state parties' both issues that are of common interest to the parties and those that are specific to an individual country. Analogies will be had from comparative River Basins dealt with above.

7.5.1 Background to issues and Nature of the Agreement

The preceding parts of this Chapter have shown the drivers or forces that led to the conclusion of the OKACOM Agreement and it is understood through this consideration done above that the nature of an international watercourse Agreement is mainly shaped by the politics that affect the individual states that are concluding the Agreement and the political settings in which they come to the table to negotiate such a treaty. As shown above the drivers to the Agreement whether internal or external are key determinants of the content and quality of the Agreement. Water management at global regional or local level can be a hot political issue especially where scarcity threatens the livelihoods of the concerned states.

This orientation in terms of how states see the potential problem leads to the thinking about an Agreement which creates a joint commission to look into the water management along the Okavango River Basin and management of water resources within the said River Basin. The general orientation towards joint management explains why the OKACOM Agreement is basically an institution creating Agreement with very little to offer on transboundary water equity. This justifies why there is the need for a separate Agreement on equitable utilisation of the Okavango River Basin and Annexure A seeks to provide a basic working framework on that important issue.

The nature of the OKACOM Agreement as an institution creating such a framework implies that the success of the Commission ends up on the doorstep of the general goodwill of the three states with high potential for default which is difficult to deal with where there is no proper dispute resolution mechanism expressly provided for in the Agreement. This is another deficiency and Annexure A provides a general working framework on that.

The idea of creating an international joint commission is not a new one. It emerged in the second decade of the 20th Century. In 1911 the Declaration of Madrid 'On the International Regulation regarding the Use of International Watercourses for Purposes other than Navigation' recommended that co-riparians establish joint commissions to monitor water governance along the concerned river basins to prevent unilateral alterations to river courses and the use of water resources which may have adverse effects

on the other co-riparians whether upstream or downstream.[725] This is an understandable position because as Chapter 3 and Chapter 5 have shown, inherent tensions are likely to arise when countries gain asymmetric benefits from the use of water resources. Possible ways of reducing these tensions include joint management, institutional building, preventive diplomacy and joint welfare maximisation.[726]

7.5.2 Salient provisions, principles and mechanisms

7.5.2.1 Organisational structure

The organisational structure of OKACOM is well set out in the Agreement entered into by the three parties in 2007. In terms of Article 4(1) of the Agreement, the Commission shall have three major organs being the Commission, the Okavango Basin Steering

[725] For more about the history see Giordano, and Wolf, 2003, *supra* p.163-171.

[726] Wolf, AT. Stahl, K. and Macomber, MF. 2003. 'Conflict and Cooperation within International River Basins: The Importance of Institutional Capacity.' *Water Resources Update*, 2003 (125): 31-40, p.125; Wolf, AT. 2000. *Trends in Transboundary Water Resources: Lessons for Cooperative Projects in the Middle East.* Ottawa: IDRC Press, pp.137-156.

Committee, and the Secretariat.[727] Further the Commission has both permanent and non-permanent members.[728]

The Commission is the principal organ of OKACOM which is responsible for the overall supervision and oversight over the activities of OKACOM. It is tasked with 20 broad based functions which are listed in Article 7 of the Organisational Structure of the Permanent Okavango River Basin Commission. These tasks include defining and approving the guidelines to achieve the main objectives of OKACOM;[729] approving accountability mechanisms and documentation.

More importantly and relevant to this research the Commission has the responsibility to submit technical, economic, financial and legal information required for the preparation

[727] OKACOM, 2006. The Organisational Structure of the Permanent Okavango River Basin Commission. OKACOM, 1994. Windhoek.

[728] Permanent members are officials nominated as Commissioners by the Contracting Parties in accordance with the provisions of the 1994 Windhoek Agreement. Non-permanent members are any officials nominated by the Contracting Parties, who are not Commissioners in terms of the 1994 Agreement, and are officials of the respective National Commissions under OKACOM. Section 5(1), (2) and (3).

[729] The Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission, Article 7(a).

of the Master Plan for the integrated use of water resources of the Basin, for consideration and approval by the Contracting Parties.[730] It is also to submit, for consideration and approval by the Contracting Parties, the Agreement on Shared Water Resources of the Basin[731] and to define terms and conditions for the prevention and resolution of conflicts related to the use of water resources of common interest in the Basin.[732]

The Okavango Basin Steering Committee (OBSC) is the technical advisory body to the Commission. It is also composed of permanent and non-permanent members, and is chaired by an OBSC member from the Contracting Party holding the Chair and appointed by the Chair of the Contracting Party who should notify other Contracting Parties of such appointment.[733]

The OBSC is also tasked with 20 broad functions including: preparation and submission, for approval by the Commission, the technical, economic and financial terms of programmes and projects aiming at the conservation, development and general use of the water resources of the Basin[734] and also preparation and submission of background

[730] Ibid, Article 7(e).

[731] Ibid, Article 7(f).

[732] Ibid, Article 7(g).

[733] Ibid Article 11(1) – (3).

[734] Ibid, Article 12(a).

information for the development of an Agreement on shared water resources of the Basin for the approval of the Commission.[735]

In addition the OBSC is supposed to prepare and submit the technical, economic, financing and legal background information for the preparation of Master Plan for the integrated use of the water resources of the Basin for the approval of the Commission.[736] It must also monitor, oversee and advise on water resources related projects and programmes implemented within the Basin.[737] More importantly in terms of conflicts, the OBSC is supposed to prevent and resolve any conflicts under the terms and conditions established by the Commission. These terms and conditions have not been produced thus Annexure A addresses that aspect.

In terms of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission, the Secretariat is the organ responsible for providing administrative, financial and general secretarial services to OKACOM. It is headed by an Executive Secretary appointed by the Commission, under the terms and conditions established in the Rules of Procedure of the Commission. The Secretariat is comprised of members and personnel as may be decided and/or approved by the Commission to enable

[735] Ibid, Article 12(b).

[736] Ibid, Article 12(c).

[737] Ibid, Article 12(d).

it to fulfil its functions. The office of OKACOM Secretariat (OKASEC) was officially inaugurated on February 2nd, 2008 and was based in Botswana at the time of this study.[738] It was planned that the office be hosted alternatively by the three countries but logistical problems suffered by the Commission had thwarted that.

The Secretariat is tasked with 12 broad functions which include providing administrative and archiving services, under the guidance, coordination and supervision of the Commission.[739] In addition the duties include the facilitation, implementation of projects and the execution of any other activities in the Basin under the guidance, coordination and supervision of the Commission and in close cooperation with the OBSC.[740] In addition, the Commission is also supposed to liaise with stakeholders and share information on OKACOM activities, under the guidance, coordination and supervision of the Commission, [741] and to manage OKACOM funds in an efficient and transparent way as per financial procedures approved by OKACOM. [742]

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[738] OKACOM Secretariat, 2009. *Annual Report of the Permanent Okavango River Basin Water Commission -2009.* Maun, Botswana; OKACOM Secretariat, p.12.

[739] The Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission Article 12(1)(a).

[740] Ibid, Article 12(1)(c).

[741] Ibid, Article 12(1)(e).

[742] Ibid, Article 12(1)(g).

7.5.2.2 Substantive Principles of the OKACOM Agreement

7.5.2.2.1 Equitable utilisation in terms of the Agreement

The OKACOM Agreement and the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission mention the concept of 'equitable utilisation' as envisaged in Article 5 of the Watercourse Convention. There has not been such an Agreement but it is mentioned that the Commission should come up with one. Put differently, OKACOM through its structures has a responsibility as a body for the development of Agreements on the equitable sharing of the water resources of the Basin,[743] but had not come up with one. This is a significant setback to achieving the objectives of the SADC Revised Protocol on Shared Watercourses to which all the three riparians are contracting parties and the Watercourse Convention to which at least Botswana and Namibia are signatories.

The mere mentioning of the term 'equitable' is, however, not enough and can never be taken to imply that there will be equitable utilisation of water in the Okavango River Basin. OKACOM seems to be aware of the danger that exists where complacency is because of the existence of a term in an Agreement because legal principles do not

[743] Ibid, Article 3(d), see also paragraph 5 of the preamble to the OKACOM Agreement, and Article 4.3 Of the OKACOM Agreement.

necessarily translate into practice. With this in mind Article 3(d) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission, echoing Article 4.3 of the OKACOM Agreement says that without prejudice to Article 4 of the OKACOM Agreement, the functions of OKACOM include the task to develop Agreements on the equitable sharing of the water resources of the Basin.

Since OKACOM has its own organs, this task is not put on the shoulder of the Commission in terms of section 7(f) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission which requires the Commission to submit the Agreement on Shared Water Resources of the Basin, for consideration and approval by the member states. Further Article 12(b) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission places an obligation on the OBSC to "prepare and submit background information for the development of an Agreement on shared water resources of the Basin for the approval of the Commission."[744]

Article 7(f) and 12(b) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission are quite interesting provisions in that they show that OKACOM was conscious that there is need for an additional Agreement to provide for

[744] Article 12(b) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission.

the mechanism for equitable utilisation of water resources in the Okavango River Basin. The procedure envisaged therefore is that the OBSC should (as a matter of obligation), prepare and submit background information for the development of an Agreement on shared water resources of the Basin for the approval of the Commission which after using that background information should prepare and submit an Agreement on Shared Water Resources of the Okavango River Basin, for consideration and approval by the member states who form OKACOM.

The above envisaged procedure had not been put into practice. There was no Agreement which showed that the Commission had fulfilled this duty under the Agreement. This means that there was no mechanism in place regarding how the three member states were going to deal with a dispute, should there be any, regarding equitability of water utilisation in the Okavango River Basin. Arguments will be advanced in the following chapter on this aspect and such arguments will lead to recommendations and proposals to fill-in this gap so as to promote cooperation, avoid conflict and if conflict exists to have a legal mechanism to settle the dispute without difficulties.

7.5.2.2.2 Transboundary water cooperation

As already noted under the drivers above, the OKACOM Agreement emphasises the practice of close cooperation between the contracting parties in the judicious development of joint projects in respect of the water resources of common interest in the Okavango

River Basin and how this will contribute towards the prosperity and welfare of their peoples.[745] This vision as it exists in the Preamble to the OKACOM Agreement serves as a guiding interpretive rule to other provisions of the Agreements and other Agreements which were and are going to be concluded under the OKACOM Agreement. Therefore, when reading these Agreements, regard should be had to the intention of the parties as shown in the Preamble to foster cooperative interactions between and among the State Parties.

In the light of the above, the preambular parts mentioning cooperation can be regarded as a key to open the minds of the makers of the OKACOM Agreement and the hitch which they intend to address is the issue of cooperation of the three State Parties. However, this key cannot be used if the meaning of the provisions of the Agreement is clear. In cases however where the wording is ambiguous, and in cases where any person interpreting the Agreement in case of a dispute among the parties is satisfied that the drafters of the Agreement must have intended to limit in some way the wide language used, then it is proper to have recourse to the Preamble.

In recognition of the above provision it was not necessary for OKACOM to repeat the concept of cooperation in the provisions of the Agreement, thus it should be understood that in reading the duties of the three organs of OKACOM as exposed above and as

[745] Paragraph 2 and 7 of the preamble to the OKACOM Agreement.

contained in detail in the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission, one should understand that all these functions are supposed to be performed in a cooperative manner among the State Parties.

Further and more particularly, the parties are supposed for example to share information and notify each other and work in unison in achieving most of the objectives of OKACOM. Thus cooperation remains central. In doing this the provisions of international law especially the SADC Protocol on Shared Watercourse Systems of 1995 should not be ignored. In particular, as already alluded to above, the said SADC Protocol emphasises cooperation in the management of shared water courses applying existing Customary International Law and community interest taking into account, among other things, the environmental, social and economic needs and the impact of intended uses of the water course.

7.5.2.3 Procedural aspects of the OKACOM Agreement

7.5.2.3.1 Public participation

The concept of public participation is central to the attainment of transboundary water equity. However, this concept does not come out clearly under the legal documents of OKACOM read holistically. There is no specific mention of public participation in the OKACOM Agreement. The said Agreement however mentions some obligations of the Commission in Article 4 and some provisions thereunder mention functions which may

require the Commission to have regard to the involvement of the public especially the affected communities in the Okavango River Basin.

In terms of clause 4.2, the Commission is obliged to advise the contracting parties on the reasonable demand for water from the consumers in the Okavango River Basin. This may imply that the Commission will have to get relevant information regarding the position of the communities in the basin on what is reasonable for their use, hence a determination of reasonable demand. This position may find support from Article 12 of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission where most of the functions of the OSBC are bent on requiring the OSBC to gather baseline data and make recommendations to the Commission.

Public participation can be done through consultations or hearings with the public resident in the basin. This is a form of participatory democratic process by which the public participate in the making of decisions which affect them. This aids in the attainment of equity at local community level as opposed to equity among the states involved. Facilitation of public involvement in the decision making processes in a river basin, therefore, entails taking steps to ensure that the public participate in the processes that may lead to activities that affect their livelihoods along the basin. The OKACOM legal documents do not specifically evidence this aspect; the only article which comes closer to this is Article 9.2 of the Rules and Procedures of the Permanent Okavango River Basin Commission which provides as follows:

> 9.2 To ensure effective stakeholder engagement in the Commission's decisions, activities and initiatives, the Commission's external communication and outreach shall be facilitated through all possible media and communication tools, in Portuguese and English.

This is a general provision stipulating clearly that public participation can effectively be achieved by using various tools of communication; it can be through the use of the print media, digital and electronic. So it can be said that the Article gives the authorities a significant measure of discretion in determining how best to fulfil their duties to facilitate public involvement. This discretion would apply in relation to the standard rules promulgated for public participation and the particular modalities appropriate for specific activities which the various, both state and non-state actors, may undertake in the basin.

This article can thus be a strong tool, if used effectively, towards the achievement of transboundary water equity at national and international level. The requirement to facilitate public involvement is in line with the contemplation in the general principles of International Water Law such as equitable utilisation which encompasses elements of participatory democracy, in addition to representative democracy. Participatory and representative democracy must be seen as mutually supportive. Public or stakeholder involvement also enhances responsible citizenship and legitimate natural resource governance. It furthermore accords with the international law principle of co-operation in international river basin management and communication between national and

international actors, as institutionalised in the OKACOM legal documents and as allowable under international water law.

The obligation to facilitate public involvement may be fulfilled in different ways and it is open to innovation. As noted above, the OKACOM authorities have discretion to determine how to fulfil their obligation to engage the stakeholders. The stakeholders must, however, have a meaningful opportunity to be heard by the laws and policies and practically be engaged. The question for one to determine is whether the relevant OKACOM authority had done what is reasonable in all the circumstances.

The Commission as a legislative arm of the OCACOM has to act reasonably when enacting an Agreement on transboundary water equity. In determining whether the Commission acted reasonably, one would consider what the authority assessed as being the appropriate method in terms of the OKACOM Agreement and other binding laws. The method and degree of public participation that is reasonable in a given case depends on a number of factors, including the nature and importance of the activity to be undertaken and the intensity of its impact on the public and in the attainment of transboundary water equity.

Cooperative relations between states in a transboundary water basin can effectively be fostered through the involvement of stakeholders at national and international level otherwise there would be conflict or the potential for such conflict. To this end, it must

be noted that the provisions in the OKACOM legal documents do not provide for public participation to an appreciable level. There was supposed to be a clear guideline on how this is to be achieved rather than leaving it to the discretion of the authorities. Further it should be noted that effective regulation and effective performance of institutions in charge of managing a transboundary river basin do not only include procedural and administrative efficiency and accuracy, but also fairness and equality, which are ingredients of equity for example as far as the distribution and application of resources and assistance are concerned.[746]

A system which disregards public participation and offends the environmental and local values of equity and reasonable use could result in instability, which would be the antithesis of effective regulation and performance in regards to transboundary water management.

Annexure B provides a general framework or stands as a working document on public participation in transboundary water management. This document is important in

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[746] See the analysis on fairness and equity in Baltutis, J. 2009, "Fairness and Equity in Transboundary Water Resources: A comparative Analysis of the TWO analysis and WAS Analysis Models as applied to the Jordan River Basin". The London School of Economics and Political Science, Master's Thesis.

achieving transboundary water equity in the Okavango River Basin and indeed public participation is a very crucial factor in all the planning and decision making that can take place in the said Basin. This is because the populations utilising the water in the basin are diverse in general and traditional communities resident along the river especially, have their unique customary laws in place and those laws are protected under international law hence they have to be respected, thus a good understanding of the concept of legal pluralism is fundamental to water management.[747]

The dualism or pluralism in water management has a long historical background and there are complex challenges which emerge from this history. The complexity of present challenges in terms of water resource management especially in Southern African

[747] See Mapaure, C. 2012. 'The Politics of Rural Water Supply in Namibia: Exploring the Dynamics of Multi-layered Institutional Interactions', in Hinz, M.O, Ruppel,O.C, and Mapaure, C. (Eds): 2012. *Knowledge lives in the Lake: Case Studies in Environmental and Customary law in Southern Africa.* Namibia Scientific Society. Windhoek; pp.233-258. See also Hinz, M.O, Mapaure C, Namwoonde, N.E Anyolo, PN. 2010. 'The protection of natural resources and biodiversity. Work in progress in three Masters Theses in the Faculty of Law of the University of Namibia.' *Namibia Law Journal*. Volume. 2 Issue 1.

countries is such that neither the state nor the communities can succeed alone, they need to collaborate.[748]

> The management of water resources therefore should include various stakeholders according to their legislated responsibilities, interests and capacity. The above review of water related legislation shows this complexity and progression in the way people understand water resource management. It illustrates that that there is an attempt to progressively integrate public participation and accountability in water management issues. [749]

A scrutiny of national water laws as exposed in Chapter 5 above shows that the current regime of natural resources and in particular water resources among the three riparian states is befuddled in internal conflicts of laws and conflictual or overlapping water management structures. This variance has its roots in the histories of the three countries which show how natural resource or water ownership and management was changed from time to time in different areas across the three countries. It is against this background that a general reading of Annexure B shows a thoughtful inclusion of the understanding of

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[748] Zenani, V and Mistri, A. 2005. *Desktop study on cultural and religious uses of water in South Africa; using regional case studies:* Unpublished Report. Department of Water Affairs and Forestry: Unit Stakeholder Empowerment. p11.

[749] Ibid.

legal pluralism as an integral part of transboundary water equity. Thus Annexures A and B should be read together on this aspect and in that way there will be a greater understanding of how the hydro politics at play in the basin can be handled. Chapter 6 has looked at the aspect of hydro politics and this argument will be dealt with in another fashion, in Chapter 8, when concluding remarks and recommendations are being made.

7.5.2.3.2 Data/Information sharing

Data sharing in the management of transboundary water management if done well can lead to cooperation but where there is no transparency and no data sharing indeed there is potential towards conflict. Seeing this potential for conflict, the member states to OKACOM decided to enter into an Agreement, the OKACOM Protocol on Hydrological Data Sharing for the Okavango River Basin on 26 May 2010.

The protocol is obviously neither all-encompassing nor perfect but it provides a general framework for the data sharing and gathering which is done with OKASEC and HTF Co-Chairpersons.[750] In terms of the Protocol, each state party is obliged to install hydro metrological stations in its territory but the member states can through OKACOM negotiate the installation of additional stations on sites of their best convenience. The data to be monitored at the stations include water level, water discharge, water quality,

[750] Article XVIII.

sediment transport and meteorological data.[751] With regard to water quality the State Parties are supposed to prioritize: electrical conductivity, total dissolved solids, dissolved oxygen pH, phosphates, nitrates, faecal coliforms in inhabited areas, total hardness, turpidity, temperature, total suspended solids and chlorophyll A.[752]

The Protocol also provides for the sharing of data on early warning information. Here the HTF is obliged to provide OKASEC with the best available data on floods, droughts and pollution magnitudes at different time and space scales. Upon receipt of such information, OKASEC is obliged to channel such information to decision making bodies and other public actors in the three member countries.[753]

The provisions of the Protocol on data sharing though appreciable are not as comprehensible as required under the 1997 Watercourses Convention which is not binding on Angola. The 1997 Convention includes language very similar to the Helsinki Rules, requiring riparian states to an international watercourse to promote cooperation through data sharing in general including notification of possible hazards and ecosystem protection.

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[751] Article V of the Protocol.

[752] Article IX of the Protocol.

[753] Article XIV of the Protocol.

Connected to the foregoing, one should understand that the situations where inter-jurisdictional data sharing related to international watercourses is most desirable when there are hydrological problems that are affecting state parties. Thus, in the light of the geopolitical and hydrological similarities dealt with already above, the protocol is a necessary instrument for the promotion of inter-state cooperation in the management the Okavango River Basin.

However, data sharing without a proper legal framework imposing obligations on the states is bound to produce no positive results. In fact, states can start conflict in the process of accessing data. One example of a situation where this can happen is when Botswana and Namibia assert their rights under the UN Watercourse Convention which Angola is not bound by. Similarly, Botswana can assert her rights under the Ramsar Convention which Angola is not bound by. This negatively impacts on the performance of institutions such as OKACOM and its organs in so far as they would like to promote cooperation among the states.

7.5.2.4 Recap and Reflections

7.5.2.4.1 Ambiguity as a disease

It is reminiscent of many international agreements that they often contain general terms, vague and ambiguous formulations and ineffective legal mechanisms. The position of the OKACOM Agreement and other supporting Agreements is not surprising as shall be made clear herein below. It is an inheritance of a legal genetic disease from International

Water Law itself as the literature review above has shown. Given the ambiguity of the equity-based principles of the law such as "equitable and reasonable utilisation," and "no significant harm," the law has also been considered vague regarding the meaning of these concepts. Whereas international law can be regarded as general thus specific rules have to be found in local or regional instruments, such international law is still too general to guide specific rules at local or regional level.

In fact, ambiguity has been used as a tool for negotiations in International Water Law. According to Fischhendler, the role of ambiguity in the design of water treaties has thus far been overlooked.[754] As noted in Chapter 3 above the Helsinki Rules are ambiguous on relevant provisions to this research being equitability and reasonable or acceptable harm. The 1997 Watercourses Convention itself, is characterised by normative ambiguity, namely in its provisions concerning "equitable and reasonable utilisation of the water resources."[755] On one hand, some authors consider that ambiguity and related flexibility

[754] Fischhendler, I. 2008, "When Ambiguity in Treaty Design Becomes Destructive: A Study of Transboundary Water," in *Global Environmental Politics,* Vol. 8, No. 1 2008, pp. 111-13; Fischhendler, I 2008. "Ambiguity in Transboundary Environmental Dispute Resolution: The Israeli—Jordanian Water Agreement," in *Journal of Peace Research*, 2008 1 (45), pp.91-109.

[755] See Cascão AE. 2011. "Use of Ambiguity in Transboundary River Basins Negotiations: The Case of the Nile River Basin," *Department of Geography, King's*

enable the riparian states negotiating and seeking agreements, while facilitating conflict resolution on complex shared river basins.[756] On the other hand, some consider that the ILC rules are "of no great help for these are marked by a high degree of interpretative ambiguity".[757] Vinogradov and others highlight "unambiguous legal instruments are essential in creating effective and sustainable institutional frameworks."[758] Moreover, it is recognised that often the non-compliance with specific water agreements are "a

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College, University of London, United Kingdom. Available at http://www.inweb.gr/twm4/abs/CASCAO%20Ana.pdf. Last accessed 09 December 2011. See also ILC 1997

[756] Cascão, A.E. 2011, *supra*. See also, Eyal, B. 1996. 'Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law,' in *The American Journal of International Law*, 1996 90(3):384-415; Wolf, 1999, *supra*.

[757] Chimni, B.S. 2005. 'A Tale of two Treaties: The Ganga and Mahakali Agreements and the Watercourses Convention,' in Subedi, SP, *International Watercourses Law for the 21st Century: The Case of the River Ganges Basin*. Aldershot: Ashgate Publishing

[758] Vinogradov, S. and Wouters, P and Jones P. 2003. *Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law*. UNESCO/IHP/WWAP Technical Documents in Hydrology. PCCP Series No. 2. Paris: UNESCO.

consequence of ambiguous treaty provisions."[759] Indeed the OKACOM Agreement is not spared in this. It will be made clearer below, how the Agreement is failing to measure up to global trends.

7.5.2.4.2 Unclear system for transboundary water equity

Like many international Agreements, the OKACOM Agreement lacks a proper system to really address transboundary water equity and a dispute resolution mechanism capable of avoiding conflict. The legal principles and practice therein formulated are not adequate to address issues regarding equitability of water allocation or utilisation in the basin, thus a source of potential conflict in the interaction of the three states. It has already been mentioned above that there are no rules formulating the criteria or a general way in which transboundary water equity can be achieved. Reference to the Helsinki Rules and other international treaties as the Preamble does is obviously not enough.

Further on an institutional level, there are no proper committees at national level to implement the Agreements. The three riparians depend on the Steering Committee members to do the work of the Commission at national level which is obviously not

[759] Wouters, P,S Vinogradov, A.J Allan, A.P Rieu-Clarke. 2005. *Sharing Transboundary Waters an Integrated Assessment of Equitable Entitlement: The Legal Assessment Model*. IHP-VI Technical Documents in Hydrology, No. 74. UNESCO, Paris, 2005.

effective compared to other basins which are compared in this Dissertation, although international water treaties and bodies are growing in number, the basins where an effective treaty or Agreement actually exists are still in a minority, with formal management institutions established in only 117 of the 263 basins.[760] It seems basin management institutions have also not learnt a lot from each other and legal diffusion of Agreements to new basins has been slow.[761] In a study of basins, by Conca, of the 62 accords investigated in the period from 1980-2000, roughly three-fourths of the Agreements took place in basins with a prior history of cooperation.[762]

Nevertheless, river treaties appear to be the best formal cooperation devices existing in international river basins today. McCaffrey[763] argues, based on reviewing several disputes between river sharing states in the Nile, the Euphrates, the Syrdarya, the Ganges,

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[760] Giordano, M.A, and A.T Wolf, 2003: 'Sharing Waters: Post-Rio International Water Management.' *Natural Resources Forum.* 2003 27: 163–171, p.168.

[761] See Conca, K., F. Wu and C. Mei, 2006. 'Global Regime Formation or Complex Institution Building? The Principled Content of International River Agreements.' *International Studies Quarterly* 2006 50: 271.

[762] Ibid.

[763] McCaffrey, SC. 2006. 'Water Conflict and International Law.' Paper presented at the Second Workshop on Hydro-Hegemony, London Water Research Group, London, 6-7 May.

the Danube, the Rhine and the Rio Grande, that the presence of a functional treaty seems to decrease the severity of water disputes. He also observes that political tension is more likely to be present where there is no such Agreement. Indeed, this can be a sound conclusion, but what is understandable from the analysis of the OKACOM Agreement is that the inclusion of equitable language does not necessarily lead to the conclusion that there will always be no conflict. In fact, the Agreement itself can be a source of conflict.

Indeed, the OKACOM Agreement is such an Agreement which can fuel conflict because of its inherent deficiencies which have been indicated above. Therefore, riparians with a water treaty are more likely to be cooperative but that cooperation potential depends on the nature and structure of the Agreement. The less the loopholes in the Agreement, the stronger the potential for cooperation and the weaker or more loopholes, the higher the propensity towards conflict on interpretation, water management, transboundary water equity, enforcement issues and other related aspects.

Looking at the comparative study provided above, one can safely argue that since the Okavango River is largely pristine as this chapter showed at the beginning above, there is actually more potential for conflict than if there was a lot of development along the river. Giordano and Wolf[764] also emphasise the importance of treaties when they, through reviewing international basins, claim that in international basins with high dam densities,

[764] Giordano and Wolf. 2003, *supra* p.166.

relations are significantly more cooperative in those basins with established water treaties than in basins where there are none.

There is indeed need for more research on transboundary water treaties.[765] This Dissertation is just one of those pieces of research and it concentrates more on transboundary water equity. Despite the large number of international rivers and the even larger number of associated transboundary institutions and treaties, Bernauer argues that social scientists have very little knowledge about the nature and extent of existing international river schemes. Most of the research on the success and failure of international river management has been techno-logical, although the obstacles to successful management are mainly political.[766] The literature review above has shown that there is indeed a number of scholars and organisations which have done research on this aspect but that research is mainly descriptive and focuses on management practices in individual rivers.[767]

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[765] See same concerns by Bernauer, T. 2002. 'Explaining Success and Failure in International River Management.' *Aquatic Sciences.* 2002 64: 1–19.

[766] Ibid.

[767] Like in McCaffrey's case above (McCaffrey. 2006, *supra*). See also remarks by Bernauer, 2002, *supra*.

The literature review above has also shown that only two quantitative studies have been conducted on what affects the signing of treaties in international river basins and the content of these. Tir and Ackerman[768] investigate the demand, catalytic and inhibiting influences on contiguous states entering into water treaties from 1900 to 1993. They find that while economic development, democracy and common membership to international governmental organisations increase the chances in the likelihood of the conclusion of a treaty, the lack of common security interests and balanced power inhibits treaties.

As this chapter has analysed, this seems to be the same case with the OKACOM Agreement as indicated by both external and internal drivers. Conca and others performed content analyses of 62 international river Agreements for the period 1980-2000, and found among other things that previous cooperation has a positive effect on the likelihood of signing a treaty at basin level.[769] There has not been a legal critical qualitative analysis of transboundary water Agreements and this research has just attempted to do that.

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[768] Tir, J. and Ackerman JT, 2004. 'To Share or Not to Share: Politics of Cooperation between Riparian States', paper presented at the 45th Annual Convention of the International Studies Association, Montreal, Canada, 17–20 March. See also Yoffe, S; Wolf, AT. and Giordano, M. 2003. 'Conflict and Cooperation over International Freshwater Resources: Indicators of Basins at Risk.' *Journal of American Water Resources Association.* 2003 39(5): 1109–1126.

[769] See Conca et al. 2006, *supra*.

7.5.2.4.3 Problems with Data collection

It is to be lauded that there is indeed a specific Agreement on data sharing. Data sharing is indeed one of the most important components of transboundary water management and it can propel the concerned riparians towards a more equitable sharing of the Okavango Waters. The concept of data sharing however has to be coupled with appropriate mechanisms of data collection and storage and dissemination. The Agreement as it stands seems to intend a well organised system but the practice as it obtains on the ground is that the three concerned states actually collect data in a very disorganised manner or at least in an uncoordinated fashion and it is hardly believable that OKACOM has a data management system. The Secretariat which is mandated with data storage and dissemination was still struggling to keep up to its own feet hence most of the tasks on its shoulder were not yet realised.

In practice as well, it must be noted, the Agreement does not impose an obligation on the states to collect data and forward it to the secretariat. It seems member states will choose what data to forward and what data to keep. This choice of what data to forward and what data to keep can lead to a situation whereby a state can securitise data and create tension among the riparians. This is an issue which may create conflicts in the future if there is no mutual trust among riparians.

It must be noted that without a proper data collection system there cannot be clear-cut formulation of a method of dealing with transboundary water equity in the basin. As a

note on this and as a reflection on what can be recommended, international law seems to provide a general framework leaving most to the discretion of individual states or smaller groups or regional groupings. In the context of water law for example international law will provide general principles leaving it to nations to decide whether they want to follow a needs based or a rights-based approach to transboundary water equity.

Sheumann has focused on 'dividing' transboundary resources rather than 'sharing' them.[770] However, international law and a general look at the various transboundary water treaties show that the law will be effective if it follows needs-based equity as opposed to rights-based equity.[771]

Therefore, for a proper law to be formulated there is need for reliable data well shared among the riparians. This informs why Annexure A remains a general working document, a framework for further development into a fully functional Agreement on transboundary water equity in the Okavango River Basin.

7.6 Summary

This chapter has analysed the external and internal drivers of the OKACOM Agreement in the light of the history behind the Agreement. The chapter narrowed down on analysing

[770] Scheumann, 1998, *supra*.

[771] Wolf, 1999, *supra* and Mohamed-Katerere and Zaag, 2003, *supra*.

the overall question regarding whether the OKACOM Agreement can be taken as an instrument of inter and intra-state conflict or co-operation by considering whether a previous water event such as management or utilisation conflict lead to treaty signing and conversely, whether riparians with a water treaty are more likely to be cooperative?

The Chapter has offered reflections on these questions by stating the fact that the OKACOM Agreement includes language on equity in international water utilisation but that does not mean that there is or will be cooperation. In fact, as the contents of the Agreement indicate, there is still a lot to do to close the gaps which create potential for conflict. However, it has been indicated through a consideration of the drivers of the Agreement that in the context of OKACOM, it is not correct that a previous water event such as management or utilisation conflict lead to treaty signing because the histories of the countries and the factors that led to the formation of OKACOM, indicate that the OKACOM Agreement was not necessitated by a dispute over water in the Okavango River Basin. However, an anticipation of conflict or negative effects of one nation's actions in the basin over the other led to the formation of the Commission through the signing of the OKACOM Agreement.

Regarding whether riparians with a water treaty are more likely to be cooperative, the answer cannot be given now as a concluding reflection for the whole research. However ,considering the findings already made in this chapter, it can be found that riparians with a water treaty are more likely to be cooperative provided that the Agreement is properly

formulated and there are no exploitable loopholes. An analysis of the OKACOM Agreement above has shown that there are exploitable loopholes in the existing legal framework and this necessitated the drafting of Annexure A and B attached to this Dissertation. A general reading of these two documents in the light of the whole OKACOM legal framework gives an idea of a sustainable and well-structured and legally constituted transboundary water equity regime.

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The literature indicated some leaning towards the assertion that the next wars will be about water and this chapter has shown that indeed this has led to the formation of transboundary water Agreements and has been a driver towards the negotiations leading to the signing of the Agreements forming joint commissions such as OKACOM. Chapter 5 and 6 have indicated the politics of these commissions and how practically some assertions by some arguments will not hold water hence riparians with a water treaty are not more likely to be cooperative.

Some reflections on the answer to the main question herein addressed could already be gotten from the history of international water law which indicates through a case analysis that the existence of an Agreement or joint commissions will not necessarily imply or mean the existence of no conflict or in other words the existence of cooperation.

Chapter 8

Conclusions and Recommendations

8.1 Introduction

This chapter summarises the findings in previous chapters especially from Chapters 3 to 7. These chapters provide some preliminary results of the issues which were highlighted in the said chapters in addition to the research questions. This chapter further provides recommendations on a number of options where problems have been identified. The lessons and recommendations are made with specific regard to those research questions. Based on the findings, a model for Okavango River Basin is herein constructed and will be recommended for practical application and or implementation on the ground in order to achieve transboundary water equity and a cooperative water regime in the Okavango River Basin.

8.2 Transboundary water equity in the context of the Okavango River Basin

Since this is the concluding Chapter, it is important at this juncture to take note, yet again of the research questions. The first research question as stated in Chapter 1 is centred on what constitutes an equitable transboundary water agreement and what constitutes an equitable allocation of shared waters? The preceding chapters have considered a number of transboundary water agreements. It is clear that in the agreements, the concept of equity

is mentioned but not given prominence in so far as the happenings on the ground are concerned.

The second research question is centred on whether the inclusion of equitable language in transboundary water management and allocation agreements really makes a practical difference in transboundary water law at the basin level with specific reference to the Kavango River Basin. The preceding chapters have shown that the actual impact of equity on transboundary water treaties remains a subject of dispute.

While all sides admit that equitable language in international water agreements contains high levels of ambiguity, some observers nevertheless assert that the application of the Watercourse Convention provides a basis for negotiation and facilitates interstate cooperation and communication. For example, McCaffrey[772] submits that the IWC's application contributes to the equitable and sustainable use of international waterways and works to preserve ecosystems. Others, however, are not so optimistic. Hey[773] and

[772] McCaffrey, S. 2001. *The Law of International Watercourses—Non-Navigational Uses.* Oxford: Oxford University Press.

[773] Hey, E., 1998. 'The Watercourses Convention: To what extent does it provide a basis for regulating uses of international watercourse?' *Review of European Community and International Environmental Law* 1998 7(3): 291-300.

Biswas[774] point out that the language of the IWC is far from clear or explicit, thereby accomplishing nothing in the way of regulating states' discretionary powers to reach agreement on water related issues. Similarly, Wolf[775] and Beaumont[776] note that the IWC's language of equity provides no practical guidelines for water allocation, which is arguably one of the most important components of international water treaties.[777]

The language of the OKACOM Agreement is laden with the same words found in the Watercourse Convention and the SADC Protocol but the happenings on the ground show that the words in the agreement and the practicalities about water equity are not in congruence. Whereas the language of the OKACOM, the SADC Protocol on Shared Watercourses and the UN Watercourses Convention speak volumes about equitable utilisation, the conflictive politics between and among the riparians are manifest as Chapter 5 and 6 have shown. Chapter

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[774] Biswas, A.K. 1999. 'Management of International Rivers: Opportunities and Constraints.' *Water Resources Development.* 1999 15(4):429–441.

[775] Wolf, A.T. 1999. 'Criteria for Equitable Allocations: The Heart of International Water Conflict.' *Natural Resources Forum.* 1999 23(1): 3–30.

[776] Beaumont, P. 2000. 'The 1997 UN Convention on the Law of Non-navigational Uses of International Watercourses: Its Strengths and Weaknesses from a Water Management Perspective and the Need for New Workable Guidelines.' *Water Resources Development.* 2000 16(4) 475-495.

[777] Ibid.

5 specifically shows that this problem is not only in the Okavango River Basin but also in other basins. The interaction of countries sharing the Orange River and the Incomati River is a typical example.

The other research questions concerned whether the signing of the water agreements on the use and management of Okavango waters has led to potential conflict or cooperation potential. This was addressed by a consideration of the relationship between water-related events and the signing of treaties. The enquiry focused on the question regarding whether previous water events such as management or utilisation conflict lead to treaty signing, and conversely, whether some interaction under a water treaty is more likely to see cooperative water events later?

Therefore, whether or not there is an agreement states have always clashed on the issue of equitable utilisation of international water courses. It has been indicated in Chapter 4 that, how the riparians in the Okavango River Basin clashed in regard to how the water resources can be utilised in accordance with state priorities. The cases of *France v Spain*: the Lake Lanoux Case, (1959);[778] *Canada v USA*: The Gut Dam Case (1968); *Aargau v Zurich* case,[779] *Societe Energie Electriquedu Littoral Mediterancen v Compagnia*

[778] 24 International Law Reports 101 (1957)

[779] 1878. Vol. 4, p.34. See also Smith, HA. *The Economic Uses of International Rivers*, London: P. K. King & Son Ltd, 1931, pp 39-43.

*Imprese Elettriche Liguri (*1939), [780] and the *Wurttemberg and Prussia v the Baden*(1927)[781] are illustrative of this point. In these disputes or cases there has always been an agreement and the agreement itself was a source of disagreement because of differences in interpretations and ambiguity in the agreements.

Again, to emphasise the point, the same problems in regards to equitability of water utilisation in the Okavango River Basin manifest themselves in Africa in the Inkomati, Orange, Limpopo and Okavango river basins. Although the concerned states in Africa have not taken each other to court over water sharing, the intricacies surrounding water equity are hindering some water development projects.

If Namibia, for example, continues with its plans to complete the Eastern Water Carrier, Botswana will take up this matter at international level be it at the Ramsar forum or SADC forum. This will show the fact that OKACOM is a weak organisation without strong institutional and legal mechanisms to police the three riparian states. The weakness of OKACOM has been manifested in the preceding chapters wherein it is indicated how that Commission has been side-lined just like in other commissions as well. A regional water

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[780] *Ibid*. pp. 253-254; also see the text in *Digest of Public International Law Cases*, (1938-1940) p. 120.

[781] (The Donauversinkung Case), German Staatsgerichtshof, June 18, 1927, pp. 217-221.

institution needs an effective legal framework if it has to be effective[782] and the weaknesses of OKACOM in this regard makes Annexure A and B important in the context of what the three riparians are doing or planning to do in the basin.

Further, the court and tribunal cases considered herein and the hydro politics shown through case studies as well as the comparative analysis demonstrate that strict adherence to the principle of state sovereignty, leads to less collaboration and conversely, emphasis of state responsibility and good neighbourliness promotes cooperation and collaboration hence positive implications on transboundary water equity. Therefore, in order for Angola, Botswana and Namibia to successfully cooperate as opposed to conflicting about transboundary water equity and its various aspects in the Okavango River Basin, they should minimise emphasis on state sovereignty. This spirit to minimise this concept is already reflected in the OKACOM Agreement but not given practical effect hence the Commission remains weak and the transboundary water equity not realised.

Furthermore, as concluded in Chapter 7 above, The OKACOM Agreement binds only the three concerned states and no other country outside the agreement can enforce the agreement for these countries. Therefore, it is rather an intricate situation where one state

[782] See similar remarks in Giordano, MA., 2002, *International River Basin Management: Global Principles and Basin Practice.* Oregon State University, Ph.D. Dissertation, pp8 – 30.

is less cooperative than the other leading to lack unison in the implementation of the agreement. Further, a cooperative arrangement may be difficult to achieve where one of the concerned states is not bound by some important international convention such as in the case of the Ramsar Convention which does not bind Angola and yet it contributes to more than 90% of the water that has been said several times runs into the Okavango Delta downstream in Botswana. These are some of the shortcomings in the Okavango River Basin which have specific and negative implications on transboundary water equity. Some solutions will be proposed below.

In addition, the findings in Chapters 4 and 6 show that international watercourses are often plagued with security concerns and this in turn often creates situations of mutual mistrust, secrecy, and politicking about what happens in the concerned watercourse; the Okavango is not an exception. Looking at how European and American countries have related to each other in so far as transboundary waters are concerned, it should be noted that any water project redistributes (in)security: Namibia wants to have water security but its delta projects negatively affect tourism in the Okavango Delta in Botswana, just to mention one example dealt with extensively in the chapters above, especially Chapter 6. In the same vein, changes resulting from developmental interventions may unduly expose some domestic or foreign groups to exclude actors from security benefits. Rather than

concentrate upon the function of undifferentiated nation state, a riparian state needs to reflect as much as possible on all the groups who gain or lose.[783]

In this light, in order to measure the security threat which provokes the hydro politics, it is important to consider the prior position of the countries involved and measure it against the position which the proposed project would put them, should it be implemented. In this discourse a project which creates a change in the security positions creates insecurity and will likely face resistance has been shown through case study analyses in Chapters 4 to 6 above. This resistance happens because insecurity is intuitively bad, thus the security discourse is inherently conservative wanting to maintain a certain *status quo*. This point is clearer as we consider how Botswana has managed to use the Delta as a security strategic tool to torpedo water infrastructural developments proposed especially by Namibia.

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[783] Jaroen, FW. And Meissner, R. 2008. 'The Politics of Security in the Okavango River Basin: From Civil War to Saving Wetlands (1975 – 2002) – A preliminary security Assessment,' in Pachova NI, Nakayama, M. and Jansky, L. 2008. *International Water Security: Domestic Treats and Opportunities*. United Nations University press. Tokyo, pp252- 295, p.254.

The water events considered in Chapter 6 above, the projects which Namibia wanted to undertake, were opposed by Botswana because Botswana felt insecure about her Delta and the future of tourism hence her economy.

Being inherently conservative, Botswana is seen to want to maintain a certain *status quo* that the river should be left as almost pristine as it is for the delta to survive. [784] This discourse or rather interaction underlines the whole hydro politics of the Okavango River Basin. Annexure A and B seek to neutralise this unhealthy situation and foster transboundary water equity in a less conflictive situation.

8.3 Recognition of water institutions and impact on Transboundary water equity

The last two research questions relate to the extent to which traditional water institutions are recognised by the equitable water agreements existing between or among countries in the Okavango River Basin and the implications of that extent of recognition on equitability of water allocation in the light of the Law of Internationally Shared Watercourses. The question goes on to cover if there is such recognition and if so, how Regime Theory can help us understand interstate water co-operation in the context of the

[784] Okavango Delta Information System (ODIS), 2005. 'Okavango Delta Management Plan Project.' Newsletter No.1. Okavango Delta Information System – ODIS. Gaborone.

Okavango River Basin and whether based on this understanding a typology or model for Okavango River Basin can be constructed.

As Chapter 5, to 7 above show, the OKACOM Agreement does not recognise local water institutions and water governing organisations in the three riparians. This non-recognition is a very serious short coming. It must be noted that the major stakeholders in transboundary water equity are not ‘countries’, ‘states’ or ‘riparians’, as abstract wholes or entities, but they are the various organisations and government bodies distilling down to local government bodies and traditional communities and even individual communal farmers. In this light, the perceptions and motivations of all of these groups must be understood and reflected in any cooperative arrangement that is to be viable in the long run.

A central feature of benefit sharing is the question of ‘broadening the basket’ of potential benefits, and it is here that ongoing regional initiatives might play an important role. Regional concerns, however, should not and cannot overshadow national economic policies, which have the ability to hinder or assist in efforts at more extensive water collaboration.

8.4. Transforming OKACOM through thematic and Pragmatic Approaches

The concept of transboundary water equity is not any easy one to understand and apply pragmatically on the ground. Like many international law principles, the concept has been

vague and difficult for states to actualise. The major way to achieve equity among states as Chapters 4 to 7 have indicated, is through water agreements or through some *ad hoc* diplomatic means. The OKACOM arrangement is not different; the states involved have tried to apply both means being the contractual arrangement under the OKACOM Agreement and diplomatic channels. However, it appears that in many instances the riparian states go through the diplomatic channels and OKACOM is often ignored – the water events in Chapter 6 above show this trend of hydro politics. These weaknesses of the OKACOM Agreement as analysed in Chapter 7 promote or at least allow this interaction to continue.

Be that as it may, this part of the Chapter considers the options available for the riparians and for OKACOM itself in so far as the achievement of transboundary water equity is concerned. First there has been theorisation and now there is movement into more pragmatic ways of understanding and dealing with or more particularly, achieving transboundary water equity within the river basin.

8.4.1 Transboundary water equity: what more is needed for the OKACOM Agreement

The considerations in Chapter 4 to 7 showed the position of the thesis in regards to how we have shortcomings in the OKACOM environment. This environment which is reminiscent of weaknesses in other water agreements across the world need solutions or at least suggestions for improvement. This part of this chapter provides possible solutions as reflected in the said

chapters. The solutions in a complete whole read together with Annexure A and B will suggest the way forward for OKACOM in so far as transboundary water equity in the Okavango River Basin is concerned.

From the chapters above evidence has been provided to indicate that the three riparians in the Okavango River Basin have had both cooperative and conflictive relations in various historical incidences even interactions beyond water in the Okavango River. Politically and militarily, Angola and Namibia have had historical tensions arising from the Angolan civil war.

The war in Angola was not only a national security concern to Namibia. It had a history behind it for the ruling SWAPO has historical links with the *Movimento Popular de Libertação de Angola* (MPLA).[785] They fought together against the same opponent *União Nacional para a Independência Total de Angola* (UNITA),[786] before Namibia gained independence, the fighting in Angola is somewhat an unfinished business for the ruling South Western People's Organisation (SWAPO) Party of Namibia because the peace which Angola is enjoying right now is seen to be fragile.[787]

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[785] English translation: People's Movement for the Liberation of Angola.

[786] English translation: National Union for the Total Independence of Angola.

[787] See sentiments aired in Hamutenya, H. 2014. Namibia and Angola: Analysis of a symbiotic relationship', in Bosl, A. 2014. *Namibia's Foreign Relations Historic*

What does the above point mean to transboundary water equity in the Okavango River Basin? The first port of call is the relationship between the three riparian countries. In this context it has to be noted that there is some hydro-hegemony among the three riparian states. Hegemony is an instructive factor when it comes to how the three countries can achieve transboundary water equity albeit the question of international water relations and the central concept of hegemony.

Hegemony is defined as the conscious system of ideas and beliefs and a lived social process as practically organised by specific and dominant meanings and values. [788] The analyses in Chapter 5 and 6 indicated that the political legitimacy of the hegemonic power is legitimised when the values and interest of the dominant party appear to be representative of and beneficial to all, such that particular meanings seem to be universally true and acceptable.[789] In the context of water relations then the term widely used is hydro-hegemony.

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contexts, current dimensions, and perspectives for the 21st Century. Konrad Adenauer Foundation, Windhoek

[788] See Williams, R. 1977. *Marxism and Literature.* Oxford: Oxford university Press, p.109.

[789] *Ibid*

In the light of the above definition Botswana behaves as the hegemonic state with an attitude, at international level, which portrays that her ideas are representative of and beneficial to all the three parties. In this regard Botswana has been stalling water development projects proposed by the other riparians especially projects which the other riparians wanted to initiate such as the water projects covered in Chapter 6 above.

8.4.2 International relations and water development programmes

It is noted in Chapter 3 and 4 that environmental issues such as water scarcity have been linked to international relations for a while now but there had not been a clear theory propounded to create a link because there was still substantial debate on whether in the first place the discussion was warranted. It is also noted in Chapter 5 that some authors[790] have been confronted with similar difficult questions of trying to link environmental problems to international conflicts and tried to link politics, natural science and economics but still were forced to come back to the conclusion that there is no direct link between environmental insecurity and international insecurity and there seems to be no foreseeable conflict or at least militarised conflict over environmental issues especially water scarcity.

[790] Homer-Dixon, TF. 1994. Environmental Scarcities and Violent Conflict: Evidence from Cases. International Security, 1994(19):1, pp. 5-40.

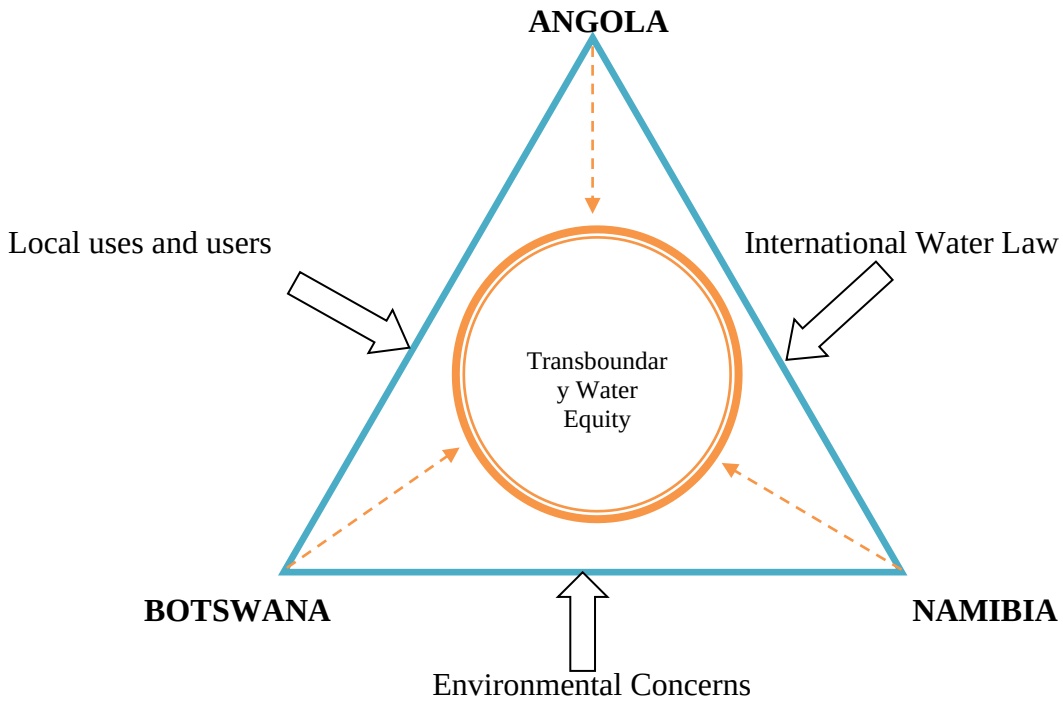
The major question is whether international relations is linked to water insecurity worldwide. Indeed, International Relations Theory can be used to explain the nature of interactions between the three riparians in the Okavango River Basin. It is a fact that if it is granted that environmental threats are global it would be acceptable that there is no way to solve or to prevent them without international cooperation and multilateralism. In the processes of cooperation there is great need to consider equitable outcomes and in the case of transboundary water law there is need to foster transboundary water equity.

In the light of the above point, unresolved environmental issues can lead to regional instability and conflict. Disputes over water resources in the Middle East mentioned in Chapter 3 and 4 especially are illustrative. Chapter 5 showed that water is a security issue in the SADC Region and Chapter 6 and 7 indicated that the Okavango River Basin is not an exception. The relations between Angola, Botswana and Namibia are an indication that water security threats are most often cross-border in nature. Such threats may not in themselves cause military conflict between states. But together with other sources of tension, such as ethnic discrimination, they may lead to violent conflict.[791]

[791] Stub, S. 1997. "Our Future – Common, or None at all," in Gledtsch, NP. 1997. *Conflict and the Environment*. Kluwer Akademic Publishers. Dordrecht. The Netherlands, pp.3-14.

The diagram below ties all the factors at play in the Okavango River Basin. It is an indication of the above-stated tensions and the causes thereof. The three riparian states are positioned on each corner of the triangular interaction to achieve equity. In the centre is what the states would want to achieve i.e. transboundary water equity. The centre is an ideal the states are striving towards as indicated by the doted arrows. The arrows do not touch the centre because the three states have not achieved that yet. By the sides of the triangular interaction are three major factors being International Water Law, local users and environmental concerns.

Figure 10: the triangular interactive model on transboundary water equity in the Okavango River Basin



These three factors are the central ones affecting the achievement of equity. They are a reflection of the internal and external drivers for the formation of OKACOM. They are impacting on the basin management institutions such as OKACOM itself and at the same time they inspire the research institutions such as the TFO Project. They should positively guide policy makers whenever it comes to the creation of institutions and also the conclusion of further agreements and the drafting of instruments such as the ones contained in Annexure A and B.

It must be noted in addition that the triangular interactive model is also a reflection of what may be used by one state to scupper the efforts of another in developing water resources in the Basin. For example, Botswana has been using all the three factors to stop Namibia from extracting the water. Namibia has also used local users as a justification for its projects. Angola has used local users and environmental concerns to justify its need for development of irrigation schemes within its territory using Okavango River Basin. So the factors can be used both in a positive and negative way.

In the light of the contents of the triangular interactive model it must be noted that recognising the link between environmental security and potential conflict, Agenda 21 concluded that unsustainable patterns of utilisation and or consumption are the major causes of environmental degradation and preventive measures are necessary.[792] As Chapter 6 above shows and as other river basins considered in Chapter 5 above also reflect, Botswana is invoking Agenda 21 argument hence the developments intended by other states are viewed as unsustainable and negative on the environment or are against international law. This model developed here will inform the contents of the five pillar model for transboundary equity which is dealt with below.

[792] Agenda 21 paragraphs 3.8l; 5.46 and 11.19b.

In the context of international water relations, it is important to note that if there is unsustainable and inequitable utilisation of the Okavango waters, potential conflict looms in the basin. This combined with other points explained above in this dissertation call for concerted efforts towards water security in the basin by following sustainable patterns of utilisation which of course should be hinged on the concept of transboundary water equity.

8.4.3 Contractual language must reflect reality

There is a great incongruence between law and practice in so far transboundary water equity is concerned as shown in Chapters 4 to 7 above. The fact that there is a transboundary water agreement does not mean that there will be transboundary water equity. Chapter 4 and 5 above evidence that normally there is sufficient water to satisfy the needs of states elsewhere in the world and in Southern Africa respectively, but where there are claims about sovereignty and control over transboundary waters and especially where the quality and quantity of water is in dispute, conflicts of uses start manifesting themselves.

International practice as shown in Chapter 4 and 5 illustrates that in cases when there are conflicts of uses, there ought to be some adjustments and accommodations of each country's interests through water-tight water agreements. The OKACOM Agreement is not strong enough to ensure transboundary water equity. Therefore, there is need for

institutional strengthening in order to achieve transboundary water equity among the three riparians sharing the Okavango River Basin.

How can OKACOM be remodelled? Over time it became evident that the protectionist approach was creating a range of social conflicts endangering the future of natural resources. The protected area model also received criticism for the high economic costs of implementation,[793] for its failure to protect endangered species, and, particularly, for ignoring the needs of local people.[794] For these reasons, fortress conservation has been progressively challenged by a counter narrative[795] called 'community conservation' which seeks to redress the injustices of the past by taking into account local people's

[793] Leader-Williams, N. and Albon, S.D. 1988. 'Allocation of resources for conservation.' *Nature*; 336 (1), pp. 533-535; see also generally, Inamdar, A. Brown, D. and Cobb, S., 1999. 'What's special About Wildlife Management in Forests? Concepts and Models of Rights-Based Management, With Recent Evidence from West- Central Africa.' *ODI Natural Resource Perspectives No.33*. London: Overseas Development Institute.

[794] Neumann, R.P. 1998. *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*. Berkeley (CA): University of California Press.

[795] Roe, E. 1991. "Development Narratives or Making the Best of Blueprint Development." *World Development.* 19 (2): 287-300.

needs and allowing them to participate in and to derive benefits from conservation.[796] This new counter narrative is centred on the theme that "conservation will either contribute to solving the problems of rural poor who live day to day with wild animals or those animals will disappear."[797] Using this same principle, transboundary water equity can be achieved by incorporating the views of the local people resident in the Okavango River Basin.

In the last few decades, the shift from fortress conservation to a more 'people-centred' approach has been well documented and has spawned a plethora of policies and programs: community based conservation (CBC), community wildlife management (CWM), community- based natural resource management (CBNRM), collaborative or joint management (JM), and integrated conservation and development programmes (ICDPs).[798] These people-centred approaches have varied greatly in level of participation,

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[796] Western, D. and Wright, M, (eds) 1994. *Natural Connections: Perspectives in Community Based Conservation*. Island Press, Washington DC.

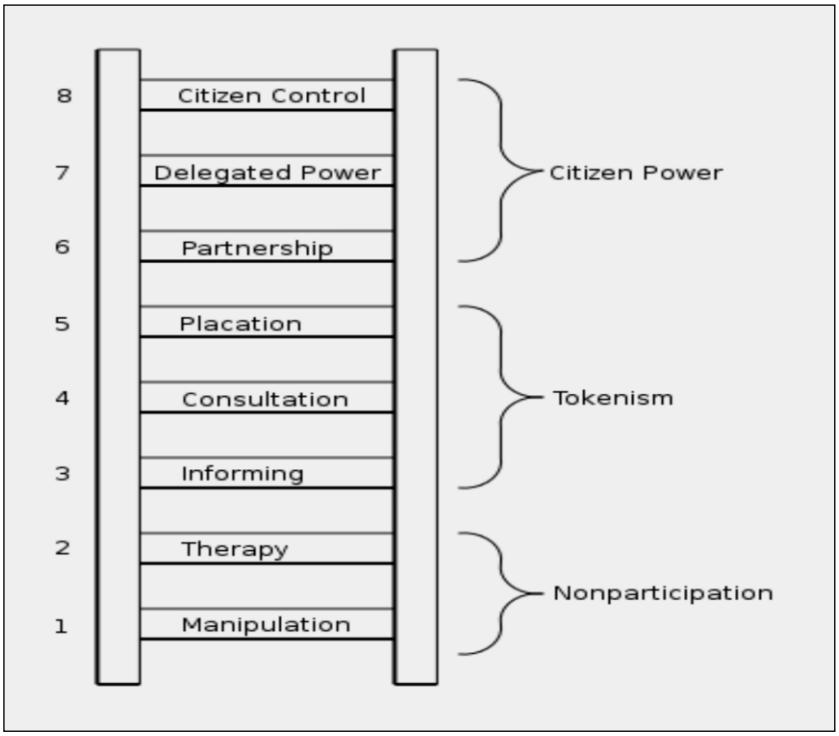
[797] Adams, J.S, and T.O, McShane. 1992. *The Myth of Wild Africa*. Norton, New York, p.xix

[798] Brown, M. and Wyckoff-Baird, B. 1992. *Designing Integrated Conservation and Development Projects*. Washington, D.C.: Biodiversity Support Program; Western, D. and R.M. Wright, (Eds). 1994. *Natural Connections: Perspectives in Community-*

and can be analysed using Arnstein and Sherry's ladder of citizen participation in decision making processes[799] .

Figure 11: Arnstein and Sherry's ladder of citizen participation in decision making processes

Bottom up



Based Conservation. Covelo, California: Island Press; Adams, W.M. and D. Hulme, 2001, *supra.*

[799] Arnstein, SR. 1969. 'A Ladder of Citizen Participation'. *American Institute of Planners, Journal of the American Institute of Planners*. 1969 35 (4):216-224.

Top down

Source: Arnstein & Sherry.[800]

At the bottom of the ladder is the 'top down' traditional national park model where local people are ignored and management decisions are made by a central government authority. At the top of the ladder is the 'bottom-up' community based conservation approach where local people establish and control an area of land and make decisions regarding the use of resources within the area. In between the two poles are various arrangements between local people and central governments with varying amounts of local participation.

The OKACOM arrangement is definitely top down and local communities are not included in decision making processes. Although local communities are mentioned in the OKACOM Agreement, the involvement of traditional communities is just on paper. To some extent Botswana has tried to involve traditional communities resident in the Delta area or Ngamiland which involvement saw the collapse of many water development projects. Whereas this involvement of traditional communities cannot be over-emphasised, it has been used by Botswana as a way of stopping other countries' projects such as projects by Namibia along the Okavango River.

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[800] *Ibid*, p. 217.

Botswana also has had a blow to itself when its Southern Okavango Integrated Water Development Plan (SOIWDP) discussed in Chapter 6 above failed because of local protest. Be that as it may, the OKACOM decision making process does not accord the local voice the volume it deserves. The top down management style of the OCAKOM is not conducive enough to achieve transboundary water equity. Provisions mentioning traditional or local communities should be given more strength hence some changes to the agreement are necessary to effect this change.

The above point is better understood against the backdrop that in Southern Africa, community conservation has taken the form of Community Based Natural Resource Management (CBNRM). CBNRM sits towards the 'bottom up' end of the participatory ladder. It involves the devolution of management responsibility to local people, the notion of natural resource or in this context, water utilisation, rather than preservation, and the idea that markets should play a role in shaping incentives for conservation.[801]

[801] Hulme D. and Murphree, M. (eds). *African Wildlife and Livelihoods*. Weaver Press, Harare, pp 24-37; Western, D. and M. Wright, 1994. 'The Background to Community-Based Conservation,' in: Western, D, Wright M, Strum S, (eds). *Natural Connections. Perspectives in Community-based Conservation*. Washington, DC: Island Press, pp. 1–12.

There are two separate themes upon which CBNRM is based. The first is the 'conservation and development' argument which arose with the first Integrated Conservation and Development Programs (ICDPs), whereby benefits and incentives ('development') are provided to local people in the hope that they will encourage them to adopt conservation friendly attitudes and behaviours. The adoption of these conservation friendly attitudes and behaviours is a very important aspect of transboundary water equity because experience with past benefit distribution programs, has indicated that benefits alone may not encourage conservation attitudes and behaviours. For this reason, CBNRM encompasses a second theme.

The second theme is centred on devolution of control over resources, the 'community control equals conservation'. CBNRM seeks to link conservation and rural development by drawing heavily on the participatory methodologies of modern development theory. More specifically, CBNRM aims to redistribute social and political power by devolving management and decision making to communities and allowing them to benefit from the management of wildlife.[802] The underlying premise of this theme is that if communities

[802] Jones, BTB. and Mosimane, AW. 2000. 'Empowering Communities to Manage Natural Resources: Where Does The New Power Lie? Case Studies from Namibia.' *Research Discussion Paper No. 40,* Windhoek: Directorate of Environmental Affairs, pp16-20 and 80. Generally see also Steiner, A. and Rihoy, E. 1995. 'The commons without the tragedy? Strategies for community-based natural resource management

are given sufficient authority and control over wildlife, they can benefit from its management. Put together, these two themes indicate that benefits may influence conservation attitudes and behaviours if there is devolution of management and community control over water resources.

8.5. Towards reasonable and equitable use in the Okavango River Basin

A general understanding of transboundary water equity as reflected in international water instruments has to reflect what is factual on the ground. This reflection is about the interaction between the law, politics and geography of the river. The other factors to be considered have been covered above, this part; now covers the geography of the river. Again as the general trend has been, there is an exposition of the theory or other thoughts leading up to the pragmatic and factual situation. This part is important as it, just like the parts above, reflects on the findings in the preceding chapters and it now builds on that in order to indicate how in the context of the Okavango River Basin there can be a better way of striving towards or, at best, an achievement of transboundary water equity.

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in Southern Africa. A review of lessons and experiences from natural resource management programmes in Botswana, Namibia, Zambia and Zimbabwe,' in Rihoy, E. (ed.), *The Commons Without the Tragedy? Strategies for Community-Based Natural Resource Management in Southern Africa. Proceedings of the Regional Natural Resource Management Programme Annual Conference.* Lilongwe: SADC Wildlife Technical Coordination Unit.

As the conclusion to this chapter shows the lessons, conclusions and recommendations made are based on the findings in the previous chapters but new thinking comes to the fore when an analysis of those findings based on the research questions leads to modelling, leads to presentation of pragmatic means supplemented by theory on how to achieve transboundary water equity in the context of OKACOM.

8.5.1 Learning from transboundary river geographical configurations

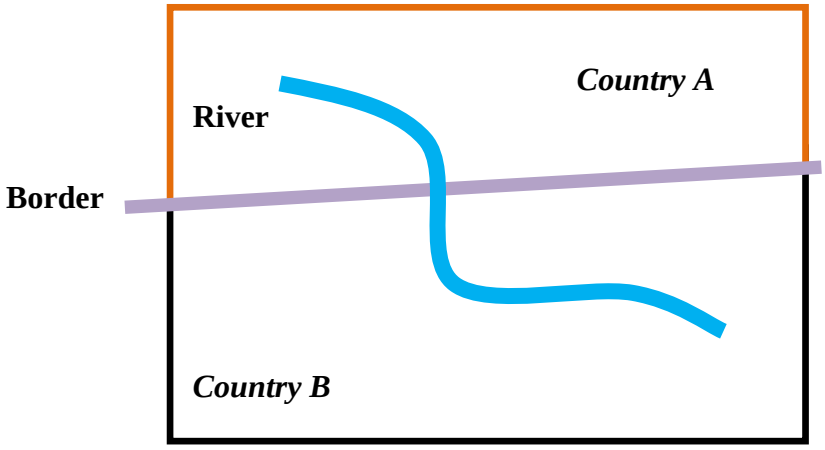
Chapter 1 above has shown that the Okavango River creates a border and at the same time it crosses borders. It creates a border between Namibia and Angola and crosses the border between Namibia and Botswana. This geographical configuration has a bearing on the way the three states are interacting. Chapter 4 and 6 have also considered other rivers across the world and the configurations of the rivers in these areas also have a bearing on transboundary water equity in those basins.

There is potential for conflict when a river crosses the border like in the diagram presented below. Chapter 6 above indicated that certain riverine geographical configurations facilitate conflict while others have been said to be more conducive to cooperation. The literature considered in that chapter largely argues that the more asymmetric the river

geography the harder it is to achieve cooperation.[803] This is notoriously most common in upstream-downstream situations.

Figure 12: River configurations and their bearing on cooperation or conflict

(a) **Through border configuration**



On the other hand, the more symmetric the river geography (i.e. the more retaliation is internalized to the river system), the less feasible conflict becomes. In other words, the more the river straddles an international boundary, the more conducive such a typology

[803] See LeMarquand, D. 1977: *International Rivers: The Politics of Cooperation*. Vancouver: Westwater Research Centre, University of British Columbia. Haftendorn, H. 2000. 'Water and International Conflict', *Third World Quarterly. 2000* 21(1): 51-68.

may be for inter-state coordination over the river.[804] The conflicts between South Africa and Lesotho before the agreement was signed are an indication of how potentially conflictive such river systems can be. The same applies to Botswana and Namibia in the Okavango River configuration as has been emphasised above.

Chapters 4 to7 above illustrate that there is significant incentive for cooperation when the river is contiguous—the incentive to reach agreement is to avoid the "tragedy of the commons."[805] Where a river creates a border such as between Angola and Namibia there is more likelihood of cooperation. This is indicated in the diagram below. This is because generally in a "through border" configuration the upstream is always and sometimes, in a position 'to directly harm the downstream state.[806] This is evidenced by the way Botswana reacts to Namibia's developmental projects. Namibia is seen as an aggressor

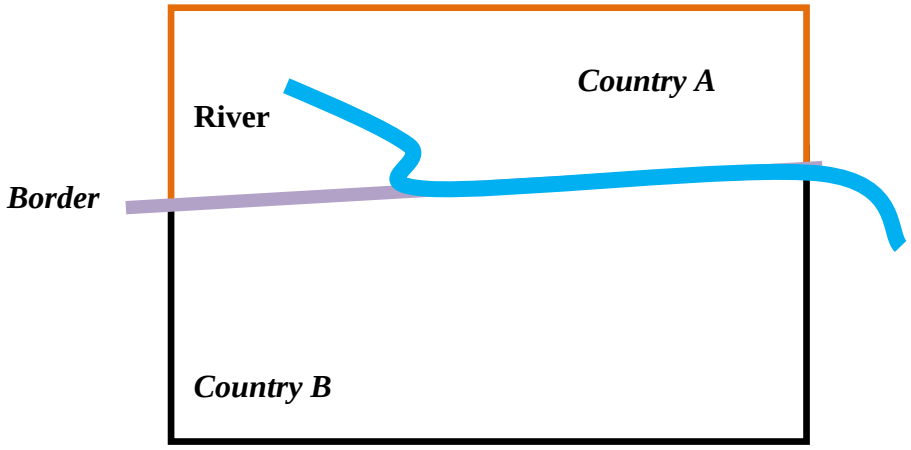
[804] Toset, H P W; Gleditsch N P & Hegre, H. 2000. 'Shared Rivers and Interstate Conflict', *Political Geography.* 19(6): 971–996.

[805] LeMarquand, 1977, *supra,* note 803, p.9

[806] Torset *et al*. 2000 *supra* note 804, pp.989-990, and Dinar, S. and Dinar, A. 2004. 'Scarporation: The Role of Scarcity in Cooperation among Basin Riparians.' Paper presented at the 2004 ISA Annual Convention, Montreal, Canada, 17-20 March, 2004.

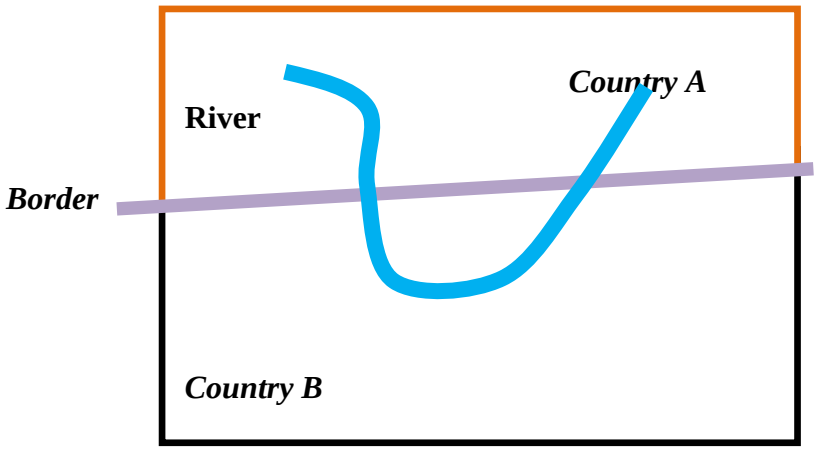
by Botswana but Namibia does not see Angola as an aggressor because of the difference in the geographical configuration of the river.

(b) The along border/contiguous configuration



The diagram below indicates a situation such as the one in the Incomati River Basin where the river crosses the border twice. These situations present an even more conflictive situation. Of all the rivers considered in Chapter 7 above, the Incomati is the one with the most conflicts even if it has one of the oldest water agreements in the SADC Region. Therefore, the mere existence of an agreement which even has equitable language in it does not mean that there will be cooperation: sometimes geography and other hydro political issues as explained especially in Chapter 4 to 7 and also reflected by the contents of Chapter 3 above, have a bigger role to play.

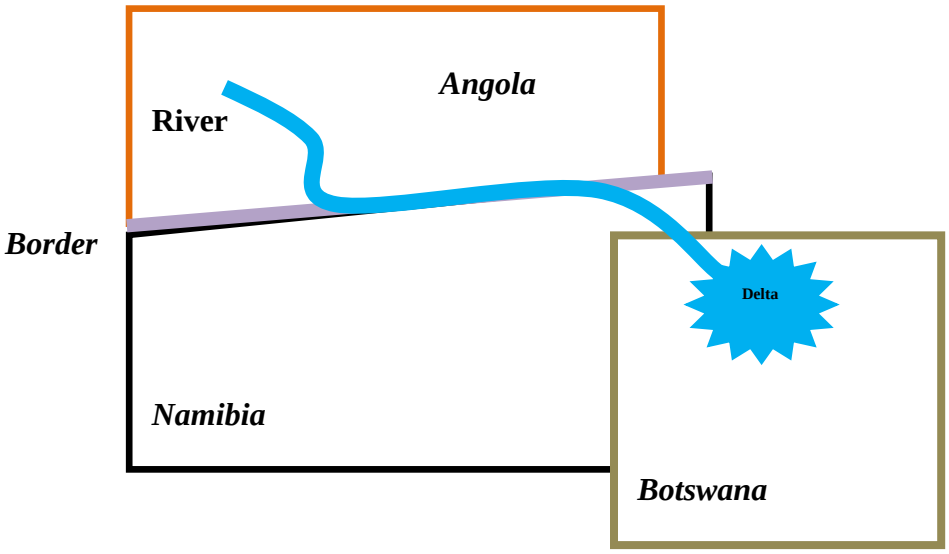
(c)The Double through-border configuration



8.5.2 The Okavango configuration

The Okavango situation is a combination of all the above configurations except the double through border. This means that the Basin is prone to more conflict than other basins because the river forms a border and at the same time crosses borders. The situation in the basin in regards to how states relate is a complex one. It seems Botswana fears Namibian projects more than Angolan ones but that should be understood in the context of the 'sleeping giant' status of Angola in the basin. The diagram below shows how these rivers' geographical configurations trigger the hydro politics as explained in Chapter 4, to 6.

(c) The mixed Okavango River Configuration



Furthermore, it must be emphasised that the asymmetrical positions of Botswana and Angola just as the asymmetrical relationship between South Africa and Lesotho as shown in Chapter 5 are a relationship embedded in the through-border configuration. This causes the concerned states to be more inclined to conflict over water developmental projects in the relevant river basin where the upstream state may exploit its geographical position to the detriment of the downstream state.

In the light of the foregoing, the downstream state such as Mozambique in the Incomati River Basin and in this case, Botswana in the Okavango River Basin, will find ways of countering the perceived or actual destructive projects of the upstream state. The case of the Popa Falls Hydro Power Plan and the Southern Okavango Integrated Water Development Plan are indicative of why Botswana opposed such projects.

Chapter 3 and 4 above have indicated that there are pieces of literature wherein it is argued that power asymmetry is not necessarily a pre-requisite for cooperation although if asymmetry does exist the hegemon such as Botswana in the case of Okavango, often plays a benign role by facilitating inter-state coordination through incentives.[807]

In this context it can be said that a state does not necessarily have to use brute power to force other states to cooperate. The USA does not use brute power against Mexico as indicated in Chapter 4 above yet it plays the role of the hegemony. Therefore, a country will have to provide some incentives such as benefit sharing and transfers *etcetera*. We see such an arrangement in the case of the Lesotho Highlands hydro power agreement between South Africa and Lesotho.

In the case of the Okavango River Basin, the situation is different. There is no state which is giving incentives as such. The only water event where some incentives were offered is when Namibia wanted to construct a hydropower station at Popa Falls. This means that there is mutual mistrust among the riparians and secondly Botswana as the more powerful state in the context of controlling the water development programmes in the river does not feel compelled or obliged to grant or offer costly incentives to encourage the weaker

[807] Young O. (ed.). 1997, *Global Governance: Drawing Insights from the Environmental Experience*. MIT Press, Cambridge Mass. pp. 155–195.

state to cooperate. The end result is a situation where states cannot develop the river, the Okavango remains largely pristine, good for the environment in general and of course tourism in Botswana but bad for water security in Namibia and bad for agriculture in fertile Angola.

8.5.3 Environmental and economic factors

While reasserting that the existence of an agreement does not necessarily mean that there will be transboundary water equity and that the OKACOM Agreement does not provide adequately for transboundary water equity, it has to be emphasised that environmental and economic factors affect the achievement of transboundary water equity. Angola has been described as a 'sleeping giant' and Namibia is one of the four most developed economies in Southern Africa, the other three being Botswana, South Africa and Zimbabwe. This tells one that the two countries Namibia and Botswana have the developmental agenda on the table and are at the same time experiencing water stress as the most arid countries in the SADC Region.

It was mentioned in Chapter 5 above that this fact brings out competition over a scarce resource and such competition is for use of the water in very different ways with Namibia being a more abstractive and consumptive country versus Botswana which is mainly a service-oriented user of the water emphasising tourism.

It is interesting to note that the International Law Commission commentary explains that the rule of equitable and reasonable use will only be applicable in the case of a "conflict of uses". Very relevant to the Okavango River Basin is the fact that a situation must arise whereby one or more watercourse States is unable to satisfy its needs as a result of another states' use of an international watercourse. It has been indicated that while the ILC's commentary states that in many cases the needs of all watercourse states will be satisfied, growing pressure on international watercourses, will increase the likelihood of a "conflict of uses" arising.

The rule of equitable and reasonable use will therefore have an increasingly important role to play in reconciling state interests over international watercourses. It has to be reiterated that The OKACOM Agreement on its own cannot lead to the achievement of transboundary water equity. This means that the existence of a transboundary water agreement does not mean that there is conflict. Although an agreement can be regarded as a benchmark for cooperation, the process of implementing or enforcing it can induce conflictive interactions.

Further, as Chapter 6 showed above, Botswana uses its 'environmental advantage' of the Ramsar Site – the delta – to scupper the projects of other countries and make sure that other riparians do not develop water resources in the whole basin without consulting it. This means that Botswana is becoming the hegemony in the Okavango River Basin. If one has to take Botswana as the hegemony, then the securitisation issue which have been

considered in Chapter 5 and 6 springs into mind and the Regime Theory will be useful to explain transboundary water equity practices in the Basin. The explanation can be gotten from the case studies in these two abovementioned chapters wherein it has been considered that riparian states are likely to overcome upstream-downstream asymmetries such as those between Namibia and Botswana which engage in efficient co-operation when an agreement providing for transboundary water equity exists.

States cooperate and solve problems in the process of cooperation. Such problems relate to water resource utilisation and management and are easier to solve when riparian countries are more integrated i.e., when the density of political, economic, and societal ties among countries is greater – and an agreement providing for equitable allocation may be one of the best tools to foster this. This element is lacking in the OKACOM Agreement, hence the relevance of Annexure A and B.

8.6 Strengthening OKACOM and moving towards transboundary water equity in the Basin

8.6.1 Background to the need for closing loopholes

The preceding chapters have illustrated the elusive nature of the concept of equity in the law of international water courses.[808] They have also illustrated that the signing of the water agreements on the use and management of Okavango River Basin has not led to

[808] See Chapter 4.

cooperation, conflicts exist and at times as has been shown above, OKACOM itself is side-lined or is consulted when it is to the convenience of the riparians.[809] In this light, Chapters 4 to 7 above show that a previous water event such as the case studies considered in Chapter 5 especially do not necessarily lead to treaty signing and in the case of OKACOM, the conclusion of the agreement was clearly not necessitated by water events. What necessitated OKACOM are mainly the internal and external drivers considered in Chapter 7 above.

Still relevant to the research questions stated in Chapter 1 above, a regime of water management which has a treaty is not more likely to cooperate. Cooperation is fostered by many factors, as there is need for more rules in the regime and especially the fostering of cooperation not because of the existence of rules but because of the desire to cooperate as riparians develop, through practice, some norms land principles which they naturally abide with. This happens through a process of interaction and in other words it is a creation of a water culture among states. Thus, indeed the Regime Theory can help in explaining state cooperation and can help us understand interstate water co-operation in the context of the Okavango River Basin. This success of the Regime Theory will work better in explaining cooperation especially if it has developed rules regarding water sharing. Based on this understanding, rules can be formulated to achieve transboundary water equity in the basin. That justifies the framework developed in Annexure A which

[809] See Chapter 6 and 7.

is based on other regime systems considered in Chapter 5 above and others which have also been mentioned through the cases in Chapter 4 and 6 above.

8.6.2 Developing a transboundary water equity agreement for OKACOM

There is no 'culture of cooperation' in the Okavango River Basin. Further, there is no hegemonic stability because Botswana is competing with Namibia or *vice-versa* but nevertheless although Botswana's policy or at least attitude towards Namibian projects is negative, Namibia as a fast growing economy is also showing her 'muscles' in so far as the basin states' behaviours are concerned.

Angola as a 'sleeping giant' is a threat to Botswana because if the 'giant' wakes up and implements water infrastructural developments using the principle of absolute territorial sovereignty, the Delta will suffer and of course that may be followed by an international outcry. This shows that the situation in the Okavango River basin is delicate – there is potential conflict which has to be averted when things have not gone to conflictive levels. That can be done by including amicable principles of cooperation, benefit sharing and conflict resolution in an agreement to be signed by all the countries. This informs the contents of Annexure A and B.

It has been mentioned in Chapter 6 above that the OKACOM Agreement and the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission mention the concept of 'equitable utilisation' as envisaged in Article 5 of

the Watercourse Convention. Further, Article 3(d) of the Agreement on the Organisational Structure of the Permanent Okavango River Basin Commission, echoing Article 4.3 of the OKACOM Agreement says that without prejudice to Article 4 of the OKACOM Agreement, the functions of OKACOM include developing Agreements on the equitable sharing of the water resources of the Basin.

There has not been such an agreement but it is mentioned that the Commission should come up with one. Put differently, OKACOM through its structures has a responsibility as a body for the development of agreements on the equitable sharing of the water resources of the basin,[810] but has not come up with one. This is a significant setback on achieving the objectives of the SADC Revised Protocol on Shared Watercourses to which all the three riparians are member states and the Watercourse Convention to which at least Botswana and Namibia are signatories.

8.6.3 The principles and concepts to consider

8.6.3.1 Unambiguous and flexible allocation method or criteria

The cases covered in Chapter 4 and the case studies covered in Chapter 5 above have indicated that without a clear allocation criterion, conflict will actually be fuelled by the

[810] Ibid, Article 3(d), see also paragraph 5 of the preamble to the OKACOM Agreement, and Article 4.3 Of the OKACOM Agreement.

agreement itself. Further the methods or criteria should not be rigid. Rigid criteria will not allow for changing circumstances. If, for example, the agreement states that Angola should get so much water per year, then the provision should be made possible to allow for situations of drought or surplus water such as floods.

8.6.3.2 Equitable distribution of benefits and costs

This is a very important factor to consider. Many transboundary water conflicts have been on water allocation but a closer look at state interaction over the cases and case studies presented above actually show that there is not a movement towards benefit-sharing as a major factor to consider towards achieving transboundary water equity. Equitable distribution concerns the sharing of benefits from water use. Instead of allocating water itself, the concerned riparians will have various projects whose benefits they share. For example, Namibia wanted to establish a hydro power station at Popa Falls, Botswana and Angola would then also get a benefit from the megawatts to be produced.

In turn Angola and Namibia should also have some benefits from the tourism that Botswana is capitalising on. If Angola wants to build dams for irrigation or any other agricultural project, then Namibia and Botswana should have a benefit from that. This is one of the best ways of sharing a river and avoiding conflicts. It has been indicated that this is taking root in international watercourses law since it has formed the foundation of

some successful treaties such as the Lesotho Highlands Water Project where benefit and cost sharing was foundational to the relationship between South Africa and Lesotho.

This success of the Regime Theory will work better in explaining cooperation especially if it has developed rules regarding water sharing. Based on this understanding rules can be formulated to achieve transboundary water equity in the basin.

8.6.3.3 Devising clear and strong conflict resolution mechanisms

A critical consideration of considerations of the Liberal Democratic Theory shows that liberal democracies do not reliably externalise their domestic norms of conflict resolution and do not treat one another with trust and respect when their interests clash. This is true of what we see in Okavango River Basin where the three democracies do not trust each other and their officials even confirm that.[811] This means that there is potential conflict and whenever there is potential conflict or actual conflict there should be strong and clear mechanisms for the resolution of such conflicts or disputes.

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[811] See generally reflections in, Soderstrom, E, Purkey, D, Matiza, T, Ashton, P. Madzwamuse, M. Walkling, R, McCreary, S, Earl, A, Masundire, H, and Mosepele, K. 2010. 'Transboundary Collaborative Learning: Case Study in The Okavango River Basin Comprehensive Assessment Project Report.' International Water Management Institute.

It has been mentioned in Chapter 7 above that like many international agreements, the OKACOM Agreement lacks a proper system to really address transboundary water equity and a dispute resolution mechanism capable of avoiding conflict. The law principles and practice therein formulated are not adequate to address issues regarding equitability of water utilisation in the basin, thus a source of potential conflict in the interaction of the three states. It has already been mentioned above that there are no rules formulating the criteria or a general way in which transboundary water equity can be achieved. Reference to the Helsinki Rules and other international treaties as the Preamble does is obviously not enough as noted in the preceding chapters and Chapter 4 has clearly shown the shortcomings in international treaties and international customary water law.

It has been indicted in Chapters 4 and 5 above that some countries have avoided conflict by inserting a flexible conflict resolution clause into their agreements. In terms of Article 15 of the Tripartite Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland on the Cooperation on the Protection of Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses says that any dispute between the Parties concerning the interpretation or implementation of the Agreement shall be settled amicably through consultation and negotiations between the Parties.

Where the dispute has not been settled within one year, from the date upon which such negotiations were requested, it may be submitted to arbitration by either Party. If the disputing parties do not agree on the subject matter of the dispute, the arbitral tribunal shall determine the subject matter. There are specific rules developed under the agreement and it is beyond the scope of this study to consider them in detail suffice to say that the mechanism seems to be designed to foster cooperation as opposed to conflict. These kinds of provisions have informed the content of Annexure A.

8.6.3.4 Weight to be given to state sovereignty, riverine integrity and equity

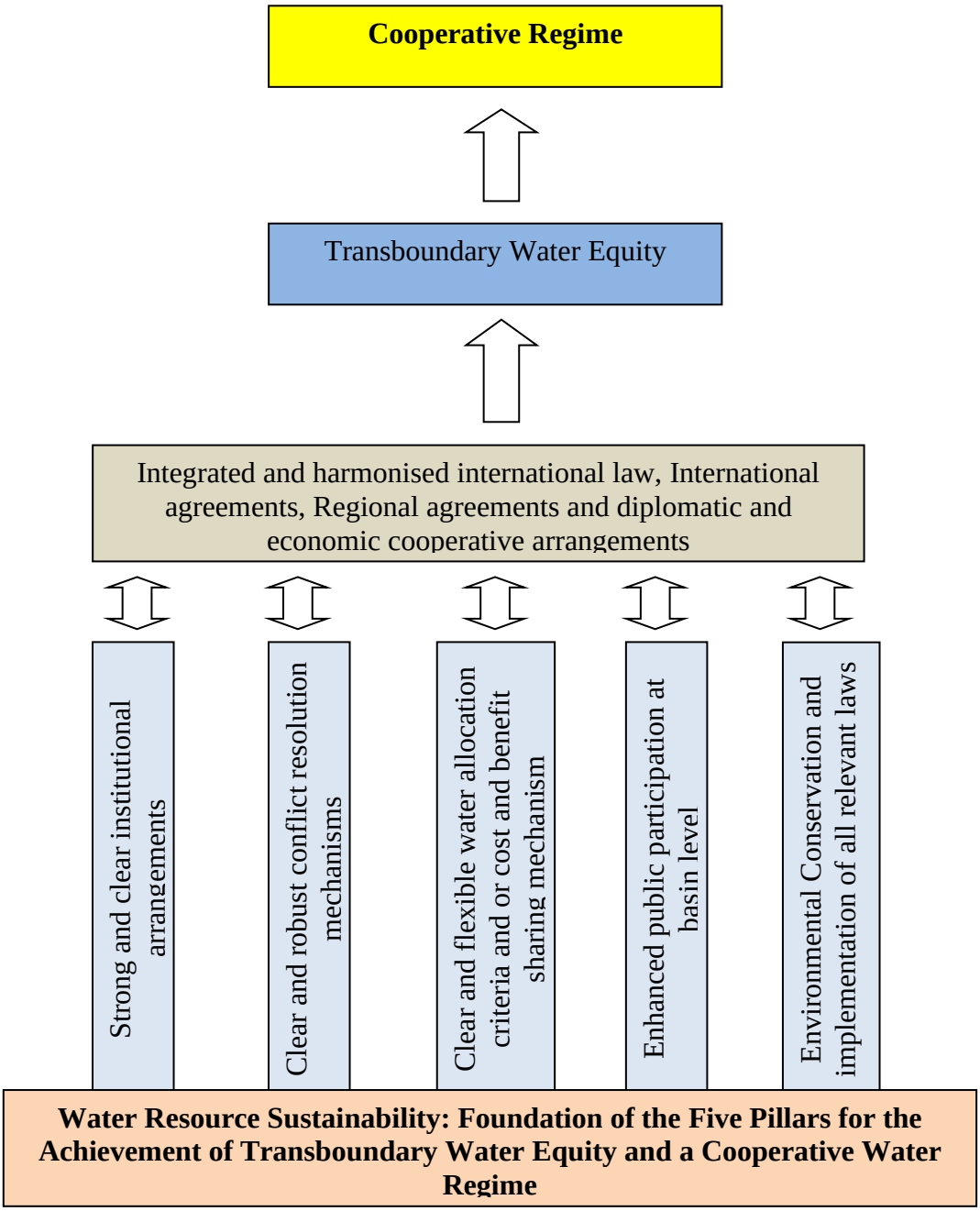
Chapters 3 and 4 above, show that the concept of absolute sovereignty has lost favour. This principle meant that a state has unilateral control over waters within a nation's territory. The cases considered in Chapter 4 above show that this doctrine has rarely been applied in real practice and is obviously against equity. On the other hand, the doctrine of absolute riverine integrity posits that every riparian has the right to the waters that flow through its territory. Again this doctrine has almost the same effect as the absolute sovereignty doctrine because it has selfish consequences where a state can do all it wants without considering the needs or welfare of other riparians especially downstream states.

The principles included in Annexure A do not consider these doctrines or principles. The major reason is that they have long been abandoned by international organisations such as the International Law Commission and the International Law Commission the latter

being a UN Body is very authoritative for it is the one that drafted the United Nations Convention on the Law of Non-Navigational Uses of Watercourses whose provisions are recognised and incorporated by reference in Preamble to the OKACOM Agreement. The principles are also in line with the SADC Protocol on Shared Water Course Systems of 1995. This Protocol emphasises equitable utilisation of shared water courses applying existing customary international law and community interest taking into account, among other things, the environmental, social and economic needs and the impact of intended uses of the water course.

The Convention is to be hailed for putting to rest the controversies that surrounded the applications of the abovementioned principles. In the place of these old unfair principles, the convention introduced the principle of equitable utilisation and the obligation not to cause significant harm. These principles have been discussed in detail in the various chapters in different contexts including this chapter and need no emphasis here save to say that Annexure A provides more emphasis to these principles because they are already part of OKACOM Agreement and are generally recognised in international law. The diagram below shows how all these factors can be tied together to achieve a cooperative environment through a construction of five pillars on the foundation of water resource sustainability.

Figure 14: A Five-Pillar Model for Transboundary Water Equity in the Okavango River Basin



8.7 A further message to Riparians in regards to domestic laws

There is need for more serious harmonisation and integration of the local laws of the riparian states and international water law. Chapter 4 above has shown that Namibia and Angola are the two states with laws which embody international water law principles with some provisions to the effect that the countries through their own laws agreed to cooperate in so far as transboundary water equity is concerned. Namibia's legislation is even more explicit on that and all ratified conventions automatically become part of her law as per Article 144 of her Constitution. Botswana, however, does not have specific provisions in her municipal legislation which enjoin her to cooperate in the management of transboundary water management. Botswana, however, is bound by a number of international instruments to cooperate. Therefore, there is great need for harmonisation and integration of municipal laws with international norms.

The OKACOM Agreement binds only the three concerned states and no other country outside the agreement. In other words, it is just privy to the three riparians. Therefore, it is rather an intricate situation where one state is less cooperative than the other leading to lack of unison in the implementation of the agreement. These are some of the shortcomings in the Okavango River Basin which have specific and negative implications on transboundary water equity in the Basin and countries are urged to integrate and harmonise their municipal laws with international law on this aspect. This will also aid in the uniformity of purpose in so far as Annexure A is concerned.

8.8 Recommendations for further research

The role of traditional communities in transboundary water resources needs further investigation. This research was mainly desk based. To achieve more practical recommendations on the role of traditional communities, one has to do empirical research on this topic. This means that one has to visit the communities in the Okavango River Basin and analyse the way these people utilise the water and how they relate to other communities across the river in the other country.

Further and related to the above point, is the role of Customary Water Law. This Dissertation did not touch on this aspect in detail because of its limited orientation which has been dealt with in Chapter 1 above.[812]

8.9 Summary

This dissertation has provided legal analyses of transboundary water equity in Southern Africa focusing on the Okavango River Basin. It indicated that whereas equity is an elusive concept, states have always striven to incorporate the principles that underline this concept. The dissertation records some findings which include that the inclusion of

[812] Customary water law is a separate research topic under task 3 of Sub Project 7 (SP07) of The Future Okavango Project under which this dissertation was compiled. Therefore, further research under that sub-project is indeed imperative

equitable language does not connote lack of conflict or cooperation. Further, the signing of the water agreements on the use and management of Okavango waters has not been the sole cause of the apparent cooperation: the cooperation that exists is mainly out of political will or based on some economic benefit. It is emphasised in the dissertation that differences of opinion between the watercourse states rely not only on their legal views but also on their material political and economic interests. The dissertation highlights many instances which show conflict among riparian in an international river basin and more detail is shed on the happenings in the Okavango River Basin.

It is clear from the analysis done that there is indeed conflict in the Okavango River Basin but the states are trying by all means including the signing of agreements and diplomatic interactions to avoid violent confrontation. Thus they are creating a basin regime based on mutual understanding and interest including benefit sharing. However, the institutional set up and the hegemonic tendencies that are involved hamper this process. This has led to a situation whereby institutions such as OKACOM are side-lined when it comes to some issues such as water development or utilisation projects.

In the same vein this has indicated the weakness of the legal regime governing this River Basin. These deficiencies call for more legal reinforcements in the form of protocols and other legal instruments. These instruments are, however, not enough. As highlighted above, there is need for administrative measures as well such as provision of personnel services and sufficient budgetary provisions to sustain the functions of the institutions

responsible for administering legal instruments, undertaking research and doing all secretarial work on a permanent basis.

A lot of problems encountered in the endeavour to achieve transboundary water equity in international river basins have been highlighted in all the chapters above. An identification of the problems calls for solutions. Therefore, recommendations have to be made with models devised to see how transboundary water equity can be achieved in the basin. Therefore, the result of the methodologies and research paradigms used and that data analysis done, was the development of a Five-Pillar model out of the understanding from the Regime Theory. Based on this model, two Model Agreements applicable to the Okavango River Basin were drafted and attached to this Dissertation as Annexures.

In all this dissertation has contributed to the growing literature under the rubric of international water law and indeed has brought new understandings on the Okavango River Basin from a legal and hydro political perspective.

ANNEXES

Annexure A

DRAFT 0AGREEMENT

BY AND AMONG

THE GOVERNMENTS OF THE REPUBLIC OF ANGOLA, THE REPUBLIC OF BOTSWANA, AND THE REPUBLIC OF NAMIBIA

ON THE EQUITABLE, REASONABLE AND BENEFICIAL SHARING OF SURFACE WATERS AND RESOURCES IN THE OKAVANGO RIVER BASIN

SIGNED IN ……..…… ON …. OF ……. 20

PREAMBLE

The Governments of the Republic of Angola, the Republic of Botswana, and the Republic of Namibia (hereinafter the "signatory states"):

Asserting that, inasmuch as the states that include the surface and hydrologically connected subsurface waters of the Okavango River Basin are most directly affected by the management and quality of such waters, such states should exercise principal authority over them, subject to certain international obligations; and

Recognising that the water resources of the Okavango River Basin are or may become valuable for a variety of beneficial purposes including, but not limited to, agricultural irrigation, municipal and domestic uses, power generation, navigation, recreation, fish and wildlife habitat maintenance, aesthetic enjoyment, livestock watering and forage maintenance, industrial use, and spiritual and religious uses; and

Sharing the international goal in the Helinski Rules and the UN Convention on the Law of Non-Navigational Uses of International Watercourses "utilise an international watercourse in an equitable and reasonable manner" and "of the Basin's waters; and to "take all appropriate measures to prevent the causing of significant harm to other watercourse States,"

Having experienced that the optimum use and protection of the Basin's water related values may be constrained or precluded because of the limits imposed on the jurisdiction of the Basin states by virtue of their political boundaries;

Persuaded by the United Nations' repeated recommendation that the states attempt to forestall and resolve interstate water disputes through agreements pursuant to the general principles of International law;

Convinced that the equitable sharing and sustainable management of the Basin's water resources can best be accomplished and equitably adjusted when necessary by the Basin states jointly by agreement rather than by litigation or international law alone or individual state administrative actions;

Understanding the need for integrated, adaptive water resource management, specifically the need for management decisions affecting the Basin to be made at the watershed level, as being of critical importance to the sustainable management of the water resources of the Okavango River Basin; and

Believing that operations of state constructed, permitted, licensed, or funded water development projects and implementation of state environmental protection or other water management programs should be consistent with

OKACOM's water resource management programs developed in cooperation with international agencies from time to time;

Now, therefore, the signatory states to this Agreement commit themselves to this joint effort to establish an effective, efficient, and equitable tripartite institutional framework and programme for the cooperative management of the Okavango River Basin's water resources as a supplement to their individual programmes and agree:

(a) to exercise their rights and responsibilities in good faith and not frustrate the Agreement purposes through action or inaction, and

(b) to make reasonable, equitable and beneficial use of their water apportionments under the Agreement with due regard to their common interests in the Okavango River Basin.

PART I: DEFINITIONS AND INTERPRETATION

Article 1: Definitions and interpretation

As used in this Agreement or in any order, rule, regulation, or guideline issued pursuant to this Agreement, the following definitions shall apply:

Base Apportionments means the interstate allocations of Okavango River Basin flows made by the Agreement to each signatory state for

(a) the maintenance of adequate stream flows for environmental purposes and

(b) satisfaction of all state, federal, and Traditional Community water rights perfected under applicable law as of the effective date of the Agreement.

Chargeability means the flow usage subjecting a state's base and supplemental apportionments to debiting as a result of its dedication to flow maintenance or reasonable, equitable and beneficial consumptive use.

Commission means the OKACOM Commission created by the Agreement between the Governments of the Republic of Angola, the Republic of Botswana and the Republic of Namibia on the Establishment of a Permanent Okavango River Basin Water Commission,1994.

Conjunctive use means the coordinated use of surface and subsurface waters of the Basin and its natural and artificial reservoirs to make optimum use of such waters and facilities.

Committee means the Joint Technical Committee of the Commission, which is the basic research and policy making unit, comprised of state officials, technical experts from the signatory states and representatives of traditional communities established under Article ….

Dispute Resolution means the procedures and guidelines for facilitating resolution of disputes among the signatory states, either by

(a) agreement or

(b) Administrative determination, as to the meaning of the Agreement or the legal effect of actions taken under it as outlined in Article …

Perfected Water Right means a water right:

(a) acquired in accordance with national law that has been exercised by the actual diversion and/or beneficial use of a specific quantity of water in accordance with that particular national law, or

(b) created by a reservation under the national law of an amount of uncommitted water reasonably necessary to serve the primary purposes of specific national establishments or programs.

Reasonable equitable and beneficial use means the application of water to an equitable and beneficial use in an amount reasonably necessary to satisfy such use under state, national or traditional community.

Safe Annual Yield means the amount of water that can be withdrawn annually from a surface or sub-surface water resource without serious water quality, net storage, environmental, or social consequences.

Species and Habitat Protection means the maintenance of stream flows adequate to maintain a productive habitat for the preservation of the normal evolutionary development of identifiable species and their habitat.

Sub-Committee for Scientific Analysis means the unit of the Committee with responsibility for the development and evaluation of scientific and technical data needed or useful in administering this Agreement.

Subsurface Water means all waters below the surface of the ground whether or not hydrologically connected to surface waters in the Basin.

Supplemental Apportionments means apportionments made by the Committee to one or more signatory states from waters determined by the Committee to be surplus to the base apportionments made by the Agreement.

PART II: ADMINISTRATION

Article 2: Implementing Agencies

(1) The rights and obligations established by this Agreement and the programmes authorised by it shall be implemented, supervised, and enforced by an interstate administrative entity entitled the Okavango River Basin Commission (the Commission) formed under the Agreement between the Governments of the Republic of Angola, the Republic of Botswana and the Republic of Namibia on

the Establishment of a Permanent Okavango River Basin Water Commission, 1994.

(2) The Commission shall be supported internally by a Committee which shall be the Administrator of the Agreement.

Article 3: The Joint Technical Committee

(1) There shall be a Joint Technical Committee (the Committee (or JTC)) comprised of:

(a) the two state managerial officials seconded by each signatory state from institutions of government agencies overseeing water allocation and management and water quality regulation,

(b) two Traditional Authority representatives from each state with expertise or traditional or scientific knowledge in water allocation and water quality regulation selected by the traditional communities in the Basin

(c) One Engineer, Hydrologist, Economist, Lawyer and Environmental Scientist

(2) The Committee shall be chaired by the Executive Secretary of the Secretariat who shall be accountable the Commission on all matters pertaining the activities of the Committee

(3) The Committee's duties shall include:

(a) Preparation and implementation of the Commission and collaborate with the Basin Steering Committee's on programmes which fall under the ambit of this agreement.

(b) Determination of water available for apportionment under this agreement the terms, conditions, and principles applicable thereto.

(c) Review for approval proposed water diversion, storage, or treatment projects with significant interstate effects, interstate and inter-basin water transfers, water marketing, or water banking.

(d) Enforcement of Commission programs and orders.

(e) Coordination of Commission's action programmes and projects with state and international agencies.

(f) Recommending possible adjustments to existing and proposed apportionments.

(g) Any other duties assigned to it by the Commission.

Article 4: Sub-Committee for Scientific Analysis

(1) Upon its first sitting, the Committee shall constitute the Sub-Committee for Scientific Research and Analysis (the Sub-Committee).

(a) The Sub-Committee membership shall be composed of an equal number of members from each signatory state, that is to mean, one Engineer, Hydrologist, Economist, Lawyer and Environmental Scientist nominated by each respective state in terms of Article 2

(b) Membership of the Sub-Committee must represent a group with recognised expertise in surface and subsurface water hydrology and modelling, operation of water storage and diversion projects, water resource economics, water quality, and fish and wildlife, legal and economic expertise

(2) The Sub-Committee's primary duties shall be to provide multidisciplinary scientific and technical support to the the Committee, including the following:

(a) Monitoring compliance with this agreement and other documents of the Commission and recommend possible adjustments thereto based on new economic, demographic, hydrologic, and environmental data.

(b) Review of proposed water storage and diversion projects for economic benefits and costs, environmental impacts, and consistency with Commission's plans and programmes.

(c) Development of a basin wide species and habitat protection and recovery program designed, to the maximum extent practicable, to preclude the need to list a species as threatened or endangered under the laws of the respective states customary laws of communities in the basin and applicable international law

(d) Coordination with appropriate national, traditional communities, and international agencies of the operation of projects covered by the Basin Steering Committee with respect to storage and releases of project water for water supply, flow maintenance, power generation, and flood control purposes.

(e) Acting in terms of the OKACOM Protocol on Hydrological Data Sharing for the Okavango River Basin in collaboration with the Task Forces of the Basin Steering Committee; establishment of a data bank of essential and reliable technical and scientific data for use in the administration of this Agreement and utilisation of such data in appropriate numeric models.

(3) The Sub-Committee may

(a) request the Task Forces of the Basin Steering Committee to develop such data on a uniform basis, also considering the provisions of the OKACOM Protocol on Hydrological Data Sharing for the Okavango River Basin.

(b) utilize data developed by International agencies or academic institutions,

(c) develop it independently, or

(d) rely on combinations thereof.

(i) Upon request of the Sub-Committee any Task Forces of the Basin Steering Committee, any of the data that the Division proposes to utilise to carry out its duties shall be referred to one or more technical or scientific experts for peer review.

(ii) The Sub-Committee's generation, acceptance, review, and utilization of any data in the Commission's programs shall create a rebuttable presumption of validity in Commission dispute resolution proceedings or administrative or judicial litigation.

(e) May perform any other duties assigned to it by the Joint Committee.

(4) The Committee shall have the power to establish other sub-committees whether permanent or *ad hoc* and assign duties to same.

PART III: SALIENT PRINCIPLES

Article 5: Principles of water sharing

(1) Being desirous of sharing by mutual agreement the waters of the international rivers flowing through the territories or the two countries and of making the

optimum utilisation of the water resources of their region in the fields of flood management irrigation, river basin development, and generation of hydro-power for the mutual interests of the peoples of the three signatory states; the three signatory states recognise the following principles and best practices:

(a) the use of the Okavango waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes.

(b) The State of the upper part of the River shall not withhold water, and the States of the middle and lower part shall not require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses.

(c) Guided by the principles of equity, fairness and no harm to either state, all the states agree to conclude water sharing Agreements with regard to other common rivers.

(d) The sharing arrangement under this Agreement shall be reviewed by the three states at five years interval or earlier, as required by each state and needed adjustments, based on principles of equity, fairness, and no harm to either state made thereto.

(e) If necessary, it would be open to either state to seek the first review after two years to assess the impact and working of the sharing arrangement as contained in this Agreement.

(f) Subject to the provisions of this Agreement, water of the Okavango waters may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes. The provisions of this Provision shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water.

(g) For the period of this Agreement, in the absence of mutual agreement on adjustments following reviews as mentioned in Article …, such disagreement shall be considered by the Committee first before an appeal is made to the Commission.

Article 6: Existing perfected rights

(1) Present perfected rights to the beneficial use of waters of the Okavango River System are unimpaired by this Agreement.

(a) Whenever storage capacity of ……. acre-feet shall have been provided on the main Okavango River within or for the benefit of the Middle and lower basin, then claims of such rights, if any, by appropriators or users of water in the Lower Basin against appropriators or users of water

in the Upper Basin shall attach to and be satisfied from water that may be stored not in conflict with Article 7.

(b) All other rights to beneficial use of waters of the Okavango River System shall be satisfied solely from the water apportioned to that Basin in which they are situated.

PART IV: INTERSTATE WATER APPORTIONMENTS

Article 7: Interstate Base and Supplemental Apportionments

(1) This Agreement makes a present annual apportionment of quantities of water to each signatory state from the Basin waters within that state considered adequate to

(a) first maintain stream flows to fulfil the requirements of applicable International, state, and customary laws and to maintain a healthy and productive Basin wide ecosystem in designated reaches of the system, in such amounts, and for such seasons or duration as shown in Appendix …….. and provide additional flows to satisfy the use requirements of all perfected water rights derived from international, state, or customary law.

(b) As depicted in the table below, the requirements to satisfy these uses and certain non-consumptive uses, such as hydroelectric power generation,

have been converted to a percentage of flows of the waters of the Okavango River Basin.

(c) This Agreement further provides for future supplemental apportionment by the Commission of reasonably predictable supplies in excess of the base apportionment to each state on a percentage basis to be determined by the Commission, based primarily on comparable transactions in the Basin.

Base Flow Apportionments

Okavango River State	***Base Percentage of Flows***
Angola ……AF……...percent	
Botswana……AF……percent	
Namibia ……AF…….percent	

(2) The Basin's estimated safe annual yield of ……..acre feet (AF) to satisfy the base apportionments is based on an analysis of the average annual and seasonal flows for the entire period of record, the driest 10-year period of record, and the wettest 10-year period.

(3) The States of the upper part of the Basin will not cause the flow of the Okavango river to be depleted below an aggregate of …….. acre-feet for any period of ten

consecutive years reckoned in continuing progressive series beginning with the first day succeeding the ratification of this Agreement.

(4) Further equitable apportionment of the beneficial uses of the waters of the Okavango River Basin unapportioned by paragraphs this Agreement may be made in the manner provided in Appendix 2, if and when the Basin shall have reached its total beneficial consumptive use.

(5) In the event of a desire for a further apportionment as provided in sub-article 4 any the affected nation, may give a notice of such desire to the other states under this agreement to the Commission through the Committee

Article 8: Supplemental Apportionments

(1) The committee shall:

(a) in no later than three (3) years after the effective date of this Agreement, determine the amount of Basin water reasonably likely to be available above base apportionments for supplemental apportionment on a sustainable basis for the following five (5) years

(b) make annual adjustments to the initial determination as new hydrologic data and use levels may dictate.

(2) At the time of its initial determination, the Committee shall announce the terms and conditions, including price, for acquisition of supplemental apportionments

and invite applications from each state for a portion or all of its percentage entitlement to such water.

(3) Water for claimed rights that were being diligently developed but were not perfected on the effective date of this Agreement may be afforded a priority when the Committee considers applications for supplemental apportionments.

(4) The terms and conditions announced by the Commission shall include as a condition to the receipt of any supplemental apportionment the extent to which any state applying for such an apportionment has been successful in conserving the water resources of the Okavango River Basin or is implementing initiatives to achieve such conservation.

(5) Each supplemental state apportionment shall be for an initial five (5) year period, subject to renewal for the same period;

(a) on terms and conditions required by law at that time,

(b) at a price to be determined by the Commission on the recommendation of the Committee based primarily on transactions between willing sellers and buyers in the region, and

(c) at the same, reduced, or increased levels as the estimates of available water supply, the states' records of reasonable, equitable and beneficial use, and

the wishes of the states and their traditional communities in the basin may dictate.

(6) The Commission shall not charge for water for

(a) perfected rights that were inadvertently omitted from base apportionments,

(b) claimed rights that were not fully perfected at the time of Agreement negotiation, and

(c) Maintenance of adequate stream flows above levels in the base apportionments.

Article 9: Transfers of Apportionments

Signatory states may make such portion of their unused base apportionments or any supplemental apportionments available to other states or to the Committee for such periods, upon such terms and conditions, and for such consideration, if any, as the states may negotiate unless the Committee after notice and hearing disapproves the transfer after determining that it would cause substantial injury to another signatory state.

Article 10: Monitoring of Apportionment Usage

(1) The Committee shall;

(a) monitor water usage throughout the Basin and enforce this Agreement and any other agrements on apportionments, giving credit for the use of imported or developed water.

(b) de-minimise exemptions for various kinds of uses, recognise a reasonable margin of error in measurement methodology, employ a system of debits and credits for under- and over-uses or deliveries with provision for a quantity limitation on such debits and requiring overuse payback over a reasonable period,

(c) establish similar reasonable rules and procedures to monitor the apportionments in an equitable and efficient fashion.

Article 11: Measurement and Apportionment Chargeability of Subsurface Water Usage

(1) Within three (3) years of the effective date of this Agreement, or such longer period as the Commission after consultation with the Committee may provide, each state shall implement reasonably uniform systems for the estimation or actual measurement of the extraction and consumptive use of subsurface waters hydrologically connected to the Basin surface flows.

(2) After that date, the consumptive use of such waters shall be charged to each state's base or supplemental apportionment in amounts and for appropriate time periods based upon Committee-approved numeric models.

Article 12: Apportionments Limited by Reasonable, equitable and beneficial Use

(1) Within three (3) years of the effective date of this Agreement, the Committee shall complete an investigation of standards and procedures applied by the signatory states for determining “reasonable, equitable and beneficial use” for various uses throughout the Basin.

(2) Within two (2) years thereafter, the Commission shall recommend standards and procedures for determining reasonable, equitable and beneficial use for such uses, taking into account different climatic and soil conditions, cropping patterns, efficiency of conveyance facilities, adequacy of measurement devices, per capita usage of comparable domestic users, cultural requirements, and other relevant considerations.

(3) To the maximum extent practicable, each state shall make reasonable, equitable and beneficial use of its apportionment pursuant to the Committee’s recommendations and shall have primary responsibility for enforcing such recommendations through the Basin Steering Committee.

(4) Based upon allegations by another signatory state that failure of a state to make reasonable, equitable and beneficial use of its apportionment has caused substantial injury to the complaining state, the Committee shall be authorized, after notice and hearing, to

(a) make an appropriate phased reduction in the state's base and/or supplemental apportionment in an amount that the Commission determines could have been conserved had the recommended standards and procedures been implemented and

(b) make such water available for supplemental apportionment to the complaining and other signatory states.

(5) The disposition of waters conserved by a signatory state or users subject to its jurisdiction shall be controlled by any applicable law at the time.

(a) The signatory state may provide that such water may be transferred to other intrastate or interstate users upon such terms and conditions, and for such consideration, if any, as the states may negotiate and the signatory state approves. Interstate transfers or banking shall require the Commission's approval after consultation with the Committee.

(b) Within two (2) years of the effective date of this Agreement, the Commission, on the recommendation of the Committee shall promulgate regulations governing the determination of the chargeability of such transfers to the Agreement apportionments of the signatory states.

(6) If the signatory state acquires such conserved water, it may transfer its interest to the Committee for such purposes, and upon such terms and conditions, and for such consideration as the states may negotiate, including but not limited to

supplemental apportionment to other states, maintenance of adequate flows or other environmental values throughout the Basin, or banking of such conserved water for future use by the conserving state.

PART V: MISCELLANEOUS PROVISIONS

Article 13: Tributary Waters

(1) The Committee may

(a) establish and enforce water quality standards and waste load allocations and

(b) enforce the respective national laws, local customary laws and International law for the interstate components of the Okavango River Basin.

(c) The signatory states and traditional communities shall exercise corresponding authority on the intrastate tributaries to such interstate streams.

(2) The Committee may recommend to the Signatory states through the Basin Steering Committee reasonable chemical, physical, and biological guidelines for water quality satisfactory for various uses of tributary waters consistent with the requirements of respective national laws, local customary laws and International law.

(a) Each signatory state shall classify or reclassify the intrastate tributary waters and submit the classification or reclassification to the Committee for its review and recommendation.

(b) The Committee may propose to the Commission such changes in its recommended classifications and standards as may be required by changed conditions, the desirability of uniformity, or to meet the primary purposes of this Agreement and of respective national laws, local customary laws and International law

(3) Consistent with the requirements of respective national laws, local customary laws and International law, each of the signatory States shall prohibit or control pollution of the intrastate tributary waters of the Basin to the extent necessary to maintain the quality of such waters to a degree at least equal to the requirements of the interstate stream immediately above the confluence of such streams.

(4) Nothing in this Agreement is intended or shall be construed to repeal, modify, or qualify the authority of any signatory state to enact any legislation or issue administrative rules or enforce any additional conditions and restrictions to reduce or prevent the pollution of intrastate tributary waters within its jurisdiction.

Article 14: Dispute Resolution

(1) Should any claim or controversy arise between any two or more of the signatory States:

(a) with respect to the Okavango waters, not covered by the terms of this Agreement;

(b) over the meaning or performance of any of the terms of this Agreement;

(c) as to the allocation of the burdens incident to the performance of any article of this Agreement or the delivery of waters as herein provided;

(d) as to the construction or operation of works within the Okavango River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or

(e) as to the diversion of water in one State for the benefit of another State; the Commissioners of the States affected, upon the request of one of them, shall forthwith appoint eligible members of the Committee with power to consider and adjust such claim or controversy, subject to confirmation of such a decision by the Commission.

(f) Should the issue not be resolved at the level of the Committee the member states shall constitute an Arbitration Board to arbitrate the matter in terms of laid down rules of arbitration.

(g) Should the arbitration fail or one party is not satisfied with the decision of the Arbitration Board, such aggrieved person shall have the right to approach the SADC Tribunal or any other regional or international

adjudicatory board with jurisdiction and agreed upon by the signatory states.

Article 15: Modification or Amendment

This Agreement may be modified or amended by action of the Committee accordance with this agreement, other legal documents of the Commission, applicable International, National or customary law with the consent of the Commission.

Article 16: Termination and Individual State Withdrawal

(1) Termination of this Agreement whether it's by one or all states shall be subject to the following conditions, at a minimum:

(a) Satisfaction of all outstanding financial obligations of the Commission;

(b) Preservation of all valid existing rights derived from International, national, or customary law or this Agreement in the Okavango River Basin; and

(c) Preservation of all environmental protection obligations assumed by the signatory states or the Commission.

(2) Any signatory State may withdraw from this Compact upon two (2) years' notice to the other signatory states, all the Commissioners subject to the conditions stipulated in sub-Article 1.

Article 17: Entering into force

This Agreement shall enter into force upon signature and shall remain in force for a period of thirty years and it shall be renewable on the basis of mutual consent.

IN WITNESS WHEREOF the undersigned being duly authorised thereto by the respective Governments, have signed this Agreement.

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REPUBLIC OF ANGOLA

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REPUBLIC OF BOTSWANA

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REPUBLIC OF NAMIBIA

Annexure B

DRAFT PROTOCOL ON PUBLIC PARTICIPATION AND EQUITABLE UTILISATION OF WATER RESOURCES IN THE OKAVANGO RIVER BASIN

PREAMBLE

The Permanent Okavango River Basin Water Commission (OKACOM recalling the 1994 Agreement that commits signatory states to the sustainable management of the Okavango river basin and the participation of the affected or interested parties in the processes involved,

Sharing the international goal in the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters that in the field of the environment, improved public participation in decision-making enhance the quality and the implementation of decisions, contribute to public awareness of environmental issues, give the public the opportunity to express its concerns and enable public authorities to take due account of such concerns, and

Recalling principle 10 of the Rio Declaration on Environment and Development that Environmental issues are best handled with the participation of all concerned citizens, at the relevant level.

Bearing in mind the relevant provisions in the Convention on Environmental Impact Assessment in a Transboundary Context, and the Convention on the Transboundary Effects of Industrial Accidents and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and other regional conventions

Recognizing also that the public needs to be aware of the procedures for participation in environmental decision-making, have free access to them and know how to use them, and

Desiring to promote environmental education to further the understanding of the environment and sustainable development and to encourage widespread public awareness of, and participation in, decisions affecting the environment and sustainable development, and

Recognizing the concern of the public about the deliberate release of invasive organisms into the environment and the need for increased transparency and greater public participation in decision-making in this field and

Convinced that the implementation of this Protocol will contribute to strengthening environmental democracy and equitable utilisation of the resources and the enjoyment of the benefits of developmental projects and use of research outputs in the Okavango River Basin;

Do hereby constitute this Protocol and agree as follows:

PART I: DEFINITIONS AND PRELIMINARY PROVISIONS

Article 1: Interpretations and definitions

Unless otherwise stipulated, and unless defined in the Agreement between the Governments of the Republic of Angola, the Republic of Botswana, and the Republic of Namibia, on the Establishment of a Permanent Okavango River Basin Water Commission, 1994, (OKACOM) the following definitions shall apply.

"Agreement" means the Agreement between the Governments of the Republic of Angola, the Republic of Botswana, and the Republic of Namibia, on the Establishment of a Permanent Okavango River Basin Water Commission, 1994.

"Assessment" means the process of identifying, predicting and evaluating -

(a) the significant effects of activities on the environment;

(b) the risks and consequences of activities and their alternatives and options for mitigation with a view to minimise the effects of activities on the environment and to maximise the benefits and to promote compliance with the principles set out in Part II

"Authorisation" means an approval, licence, permit or other authorisation by a competent authority in respect of a listed Project;

"Basin" means the Okavango River Basin

"Basin resource" includes—

(a) the air, soil, waters and minerals of in the Basin;

(b) the mammal, bird, fish and other animal life of in the Basin;

(c) the trees, grasses and other vegetation of in the Basin;

(d) the springs, vleis, sponges, reed-beds, marshes, swamps and public streams forming part of the Basin;

(e) any other thing that the President may, by notice in a statutory instrument, declare to be a natural resource, including a landscape or scenery which, in his opinion, should be preserved on account of its aesthetic appeal or scenic value;

"Biological diversity" means biological diversity as defined in the United Nations Convention on Biological Diversity adopted in 1992;

"Effluent" means waste water or other fluid originating from domestic, agricultural or industrial Project, whether the water or fluid is treated or untreated and whether it is discharged directly or indirectly into the environment;

"Environment" means—

(a) the natural and man-made resources physical resources, both biotic and abiotic, occurring in the lithosphere and atmosphere, water, soil, minerals and living organisms, whether indigenous or exotic and the interaction between them;

(b) ecosystems, habitats, spatial surroundings or other constituent parts, whether natural or modified or constructed by people and

communities, including urbanised areas, agricultural areas, rural landscapes, and places of cultural significance;

(c) the economic, social, cultural or aesthetic conditions and qualities that contribute to the value of the matters set out in paragraphs (a) and (b);

"Environmental impact assessment" means an evaluation of a project to determine its impact on the environment and human health and to set out the required environmental monitoring and management procedures and plans;

"Listed Project" means a Project listed in Appendix I

"Monitor" means to assess, continuously or periodically, the state and trends of developments on any part of the environment as well as the actual or potential impact of any Project on the environment and human health;

"Pollutant" means a substance which, when released from any process, is capable of causing pollution;

"Pollution" means any direct or indirect alteration of the physical, thermal, chemical, biological or radioactive properties of the environment caused by the discharge, emission or deposit of a substance into the Basin in such quantity and for such duration and under such conditions as to cause an actual or potential danger to the Basin or to human health;

"Project" means a physical work that an applicant proposes to construct, operate, modify, decommission or abandon or an Project that an applicant proposes to undertake;

"Public" means a range of stakeholders holding an array of views and concerns on an issue being considered for decision making, that is to say one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organizations or groups.

"Public participation" means any process or set of processes that directly engage(s) the public in decision-making and gives full consideration to public input in making that decision "Review" means the process of determining whether an assessment has been carried out correctly or whether the resulting information is adequate in order to make a decision;

"sustainable development" means human use of a natural resource, whether renewable or non-renewable, or the environment, in such a manner that it may equitably yield the greatest benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations including the maintenance and improvement of the capacity of the environment to produce renewable resources and the natural capacity for regeneration of such resources.

"sustainable utilisation" means the use or exploitation of the Basin resources which guards against the extinction, depletion or degradation of any natural resource and permits the replenishment of natural resources by natural means or otherwise;

Article 2: General provisions

(1) In any matter that affects the people and the environmental health of the Okavango River Basin the signatory states shall endeavour to achieve the following:

(a) Taking the necessary legislative, regulatory and other measures, including measures to achieve compatibility between the provisions implementing the information, public participation and access-to-justice provisions in this Protocol, as well as proper enforcement measures, to establish and maintain a clear, transparent and consistent framework to implement the provisions of this Protocol.

(b) Ensuring that officials and authorities assist and provide guidance to the public in seeking access to information, in facilitating participation in decision-making and in seeking access to justice in environmental matters.

(c) Promoting environmental education and environmental awareness among the public, especially on how to obtain access to information, to participate in decision making processes at any relevant level of the management of the Basin.

(2) This Protocol shall not prejudice the enjoyment of the rights accorded by National Law and of the rights which under international law a State is obliged to accord to its water resource users, even where this Protocol does not recognize such rights or recognizes them to a lesser extent.

(3) Every State shall make public its national legislation or regulations affecting the equitable management and utilization of the water resources in the Basin.

Article 3: Environmental rights and principles of public participation in the Basin

(4) In implementing any listed Project, each signatory state shall ensure adherence of the following principles:

(a) the participation of the public in environmental governance must be promoted and all people must be given an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation;

(b) environmental education, environmental awareness and the sharing of knowledge and experience must be promoted in order to increase the capacity of communities to address environmental issues and engender

values, attitudes, skills and behaviour consistent with environmental management;

(c) development must be socially, environmentally and economically sustainable.

(d) anticipated negative impact on the environment and on people's environmental rights shall be prevented, and where they cannot be altogether prevented, be minimised and remedied;

(e) any person who causes pollution or environmental degradation shall meet the cost of remedying such pollution or environmental degradation and any resultant adverse health effects, as well as the cost of preventing, controlling or minimising further pollution, environmental damage or adverse health effects;

(f) global and international responsibilities relating to the environment must be discharged in the national and community interest;

(g) sensitive, vulnerable and highly dynamic or stressed ecosystems within the Basin require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

(h) equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be taken into account to ensure the sustainability of the systems and to prevent harmful effects;

(5) To the extent that they are applicable to them, all signatory states shall ensure that the environmental rights and principles of environmental management set out in sub-articles (1) shall:

(a) serve as the general framework within which plans for the management of the Basin shall be formulated; and

(b) serve as guidelines for the exercise of any function concerning, public participation, the protection or management of the Basin in terms of this Protocol or any other national enactment; and

(c) guide the interpretation, administration and implementation of any other law concerning the promotion of public participation in the Basin.

PART II: PUBLIC PARTIPATION IN SPECIFIED ACTIVITIES AT NATIONAL LEVEL

Article 4: Listing of Activities

(2) Each state signatory:

(a) Shall, in its national legislation come up with a list of prescribed activities in the State which in its opinion require the input of the public within the Basin whenever a Project is proposed to be carried out in the Basin.

(b) Shall, in accordance with its national law, also apply the provisions of Article 9 to decisions on proposed activities not listed I its national legislation which may have a significant effect on the Basin environment.

To this end, Parties shall determine whether such a proposed Project is subject to Article; and

(c) May decide, on a case-by-case basis if so provided under national law, not to apply the provisions of Article 9 to proposed activities serving national defence purposes, if that signatory state deems that such application would have an adverse effect on these purposes.

Article 5: Information to be disseminated

(1) Whenever a listed Project is to be carried out the public concerned shall be informed, either by public notice or individually as appropriate, early in an environmental decision-making procedure, and in an adequate, timely and effective manner, inter alia, of:

(a) The proposed Project and the application on which a decision will be taken;

(b) The nature of possible decisions or the draft decision;

(c) The public authority responsible for making the decision;

(d) The envisaged procedure, including, as and when this information can be provided:

(i) The commencement of the procedure;

(ii) The opportunities for the public to participate;

(iii) The time and venue of any envisaged public hearing;

(iv) An indication of the public authority from which relevant information can be obtained and where the relevant information has been deposited for examination by the public;

(v) An indication of the relevant public authority or any other official body to which comments or questions can be submitted and of the time schedule for transmittal of comments or questions; and

(vi) An indication of what environmental information relevant to the proposed Project is available; and

(vii) Whether the Project is subject to a national or transboundary environmental impact assessment procedure.

(2) The public participation procedures shall include reasonable time-frames for the different phases, allowing sufficient time for informing the public in accordance with paragraph 2 above and for the public to prepare and participate effectively during the environmental decision-making.

Article 6: The Public to provide input after adequate information disclosure

(1) Each Signatory State shall provide for early public participation, when all options are open and effective public participation can take place. To this end:

(a) Each Signatory State should, where appropriate, encourage prospective applicants to identify the public concerned, to enter into discussions, and

to provide information regarding the objectives of their application before applying for a permit.

(b) Each Signatory State shall require the competent public authorities to give the public concerned access for examination, upon request where so required under national law, free of charge and as soon as it becomes available, to all information relevant to the decision-making referred to in this article that is available at the time of the public participation procedure, without prejudice to the right of signatory States to refuse to disclose certain information in accordance with Article 4(c).

(2) The relevant information mentioned in sub-article 4 shall include at least, and without prejudice to the provisions of sub-article 6(1),

(a) A description of the site and the physical and technical characteristics of the proposed Project, including an estimate of the expected residues and emissions, if any;

(b) A description of the significant effects of the proposed Project on the environment, if any;

(c) A description of the measures envisaged to prevent and/or reduce the effects, including emissions, if any;

(d) A non-technical summary of the above;

(e) An outline of the main alternatives studied by the applicant; and

(f) In accordance with national legislation, the main reports and advice issued to the public authority at the time when the public concerned shall be informed in accordance with paragraph 2 above.

Article 7: Procedures to be followed

(1) To this end National legislation must ensure that:

(a) Procedures for public participation where a project affects only one signatory state shall allow the public to submit, in writing or, as appropriate, at a public hearing or inquiry with the applicant, any comments, information, analyses or opinions that it considers relevant to the proposed Project.

(b) Each Signatory State shall ensure that in the decision to be made under its national laws due account is taken of the outcome of the public participation.

(c) Each Signatory State shall ensure that, when the decision has been taken by the public authority, the public is promptly informed of the decision in accordance with the appropriate procedures at in terms of national laws also considering the provisions of this Protocol.

(d) Each Signatory State shall make accessible to the public the text of the decision along with the reasons and considerations on which the decision is based.

(2) Each Signatory State shall ensure that, when a public authority reconsiders or updates the operating conditions for a Project referred to in paragraph 1, the provisions of paragraphs (a) to (d) of this article are applied *mutatis mutandis*, and where appropriate.

Article 8: Public Participation Concerning Laws Plans, Programmes and Policies

(1) Each Signatory State shall strive to promote effective public participation at an appropriate stage, and while options are still open, during the preparation by public authorities of executive regulations and other generally applicable legally binding rules that may have a significant effect on the environment.

(2) To this end, the following steps should be taken:

(a) Time-frames sufficient for effective participation should be fixed;

(b) Draft rules should be published or otherwise made publicly available; and

(c) The public should be given the opportunity to comment, directly or through representative consultative bodies.

(3) The result of the public participation shall be taken into account as far as possible.

(4) Each Signatory State shall make appropriate practical and/or other provisions for the public to participate during the preparation of Environmental Plans and Programmes within a transparent and fair framework, having provided the necessary information to the public.

(5) Within this framework and considering the provisions of legislation of each Signatory State Article 6 shall be applied. The public which may participate shall be identified by the relevant public authority, taking into account the objectives of this Protocol.

(6) To the extent appropriate, each Signatory State shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment at all levels of legislative authority.

PART IV: PUBLIC PARTICIPATION IN TRANSBOUNDARY PROJECTS

Article 9: Listing of Activities at Basin Level

(1) Each State signatory:

(d) Shall come up with a list of activities in the Basin which in its opinion require the input of the public whenever a Project is proposed to be carried out in the Basin. The list shall be collated and the final list shall be deemed to be Annexure I to this Protocol (listed Project).

(e) Shall, in accordance with its national law, also apply the provisions of this Article to decisions on proposed activities not listed in Annexure I which may have a significant effect on the environment. To this end, Parties shall

determine whether such a proposed Project is subject to these provisions; and

(f) May decide, on a case-by-case basis if so provided under national law, not to apply the provisions of this Article to proposed activities serving national defence purposes, if that signatory state deems that such application would have an adverse effect on these purposes.

Article 10: Types of licences and purposes

(1) Where a listed Project is to be carried out and it affects two or all signatory states, such Project shall be dealt with at basin level considering the public participation under the oversight of the institutions of the Commission in the manner prescribed in this Part taking into consideration, the purpose and objectives of this Protocol.

(a) A prospective applicant has to first apply for a Clearance Certificate first and gain legal permission to do an environmental impact assessment.

(b) Upon due consideration of the environmental impact assessment report the Committee after due consideration of the procedures stipulated herein; has to determine whether to grant an environmental licence which entitles such person to carry out the listed project.

Article 11: Application for the Certificate

(1) A person who is required to obtain a licence must, in the prescribed form and manner and on payment of the prescribed fee, apply to the Committee for a Clearance Certificate in respect of the listed project to be undertaken.

(2) The Committee shall examine every application submitted in terms of sub-article 1 within 30 days of receipt of such application and, on completion of this examination, may:

(a) ask the applicant to submit such further information as the Secretariat may reasonably require; or

(b) if the Committee is satisfied that the proposed environmental impact assessment will be capable of evaluating the project's impact on the environment, approve the application and ask the applicant to proceed to prepare an environmental impact assessment; or

(c) if it not satisfied as provided in paragraph (b), reject the application and give the applicant such directions as may be necessary for the preparation of a fresh application.

(3) When approving an application in terms of sub-article 2(b), the Committee may fix conditions relating to the scope of the assessment, and the applicant concerned shall comply with any such conditions including a requirement that the applicant shall engage a person independent of the development who is an expert in environmental planning and management services to prepare the environmental impact assessment.

(4) A decision under sub-article 2(c) does not exempt the applicant from complying with other requirements prescribed in respect of the proposed Project under any other law.

Article 12: The environmental impact assessment report

(1) After carrying out the assessment, the person who so carried out the Assessment shall cause a prescribed number of copies of the report to be delivered to the Committee.

(2) An environmental impact assessment report shall:

(a) give a detailed description of the Project and the activities to be undertaken in implementing it; and

(b) state the reasons for selecting the proposed site of the Project; and

(c) give a detailed description of the likely impact the project may have on the Basin environment or any segment thereof, covering the direct, indirect, cumulative, short-term and long-term effects of the project; and

(d) specify the measures proposed for eliminating, reducing or mitigating any anticipated adverse effects the project may have on the environment, identifying ways of monitoring and managing the environmental effects of the project; and

(e) indicate whether the environment of any other country is likely to be affected by the project and any measures to be taken to minimise any damage to that environment; and

(f) where applicable, indicate how the applicant proposes to integrate biological diversity in the project; and

(g) describe concisely the methodology used by the applicant to compile the environmental impact assessment report.

Article 13: Procedure after receipt of the Report

(1) If, upon submission of the assessment report by the applicant, it appears to the Committee that the prescribed requirements in respect of the contents of the assessment report have been complied with the Committee shall:

(a) at the cost of the applicant, notify the application in the prescribed manner; or

(b) direct the proponent to notify the application in the prescribed manner.

(2) A notification of an application under sub-article (1) must -

(a) contain the prescribed particulars in relation to the application;

(b) state that the application and assessment report are available for inspection at the offices of the Committee and designated offices in each signatory state, the later notifying its own public through a prescribed manner

(c) invite written submissions in relation to the application and assessment to be lodged with the Committee; and

(d) specify the closing date for submissions of such written submissions.

(3) Where the proponent is directed under sub-article (1)(b) to notify the application the proponent must furnish proof of the notification to the Committee as soon as is possible after the date of the publication of the notification.

(4) A submission delivered to the office of the Commissioner in each signatory state shall be deemed to have been submitted to the Committee: provided all the requirements in terms of the notice are satisfied and it is incumbent upon the Commissioner to deliver such submissions to the Committee within 7 days of the closing date for the written submissions to his/her office.

Article 14: Review of the Report and issue of Licence

(1) The Process of reviewing an assessment report shall not take more than 60 days and in the process of considering the report, the Committee may take any action the it considers appropriate for the review of the application for the project and the subsequent report, including:

(a) an investigation, including a process of public consultation, in relation to any matter concerning the application, the assessment or any submission; or

(b) holding a public hearing.

(c) consulting any person, institution, or authority on any matter concerning the application, the assessment or any submission received in relation to the application;

(d) carrying out, or appointing a person or a committee of persons to carry out,

(2) At least 14 days before the date fixed for the holding of a public hearing in accordance with Article sub-article 2, the Committee must give notice of the public hearing:

(a) in the prescribed manner to the applicant;

(b) in writing to every person from whom a submission in relation to the application has been received; and

(c) by publication of the notice in the prescribed manner.

(3) The notice in terms of sub-article (2) must:

(a) specify the date, time and place of the public hearing; and

(b) contain a brief description of the nature of the application.

Article 15: Discretion of the Committee

(1) Upon considering an environmental impact assessment report, and following the participatory process in this Part the Committee may do any of the following

(a) approve the project to which the environmental impact assessment report relates; or

(b) require the applicant to conduct a further environmental impact assessment of the whole or part of the project; or

(c) require the applicant to supply such further information or do such other thing as The Committee considers necessary or desirable, taking into account the need to achieve the objectives of this Protocol.

(2) The Committee must within 14 days and in the prescribed form and manner notify the applicant of the decision made in terms of sub-article (1).

(3) Upon approving a project, the Committee shall issue to the applicant a Licence in the prescribed form.

(a) identifying the project; and

(b) stating the name and address of the applicant and, where the applicant is a company, the company's registered office; and

(c) stating the date of issue of the certificate and the date of its expiry; and

(d) setting out any conditions fixed by the Committee in terms of any other relevant law; and

(e) setting out such other matters as may be prescribed.

Article 16: Considerations in making a decision

(1) In making a decision in terms of article 15 the Committee must -

(a) follow the public participatory or consultative process referred to in Article 14, and 15 also considering the principles laid down in Article Part II of this Protocol and

(b) take into account:

(i) any comment received in terms of the public participatory or consultative process;

(ii) the significant effect of the proposed Project on the environment;

(iii) the nature and extent of the proposed Project;

(iv) the principles set out in Article 3; and

(v) any other matter that may be prescribed

(2) The Committee shall refuse to consider an environmental assessment report on a project if the applicant concerned has not submitted an application in terms of this Article for that project and its assessment.

Article 17: Record of decisions and public inspection

(1) The Committee must, in accordance with this Protocol keep a record of decisions made under this Part.

(a) The record of decisions must be kept in the prescribed form and must consist of information that may be prescribed.

(b) A copy of the record must be made available for public inspection at the office of each signatory State's Commissioner during office hours: provided that the decision concerns national security defence or other classified information.

Article 18: Inspection of environmental impact assessment reports

An environmental impact assessment report shall be open for public inspection at all reasonable times at the offices of each Commissioner in each respective Signatory State for no payment of any prescribed fee: Provided that no person shall use any information contained therein for personal benefit except for purposes of civil proceedings brought under this Protocol or under any other law in a matter relating to the protection and management of the Basin environment.

PART IV: MISCELLANEOUS PROVISIONS

Article 15: Offences

Any person who fails to comply with any condition attached to licence in terms of this Protocol commits an offence and is on conviction liable to a fine not exceeding US$50 000 or to imprisonment for a period not exceeding 20 years or to both such fine and such imprisonment.

Article 16: Notice in Public consultations

When in terms of this Protocol that the Committee is required to consult any person or organ of state, such consultation is regarded as having been satisfied if a written notification of intention to act has been made to that person or organ of state and no response has been received within a reasonable time.

Article 13: Dispute Resolution

(1) Should any claim or controversy arise between any two or more of the signatory States:

(a) with respect to the Okavango waters, not covered by the terms of this Protocol;

(b) over the meaning or performance of any of the terms of this Protocol;

(c) as to the allocation of the burdens incident to the performance of any article of this Protocol or the delivery of waters as herein provided;

(d) as to the processes related to the construction or operation of works within the Okavango River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or

(e) as to the procedures followed in the implementation of projects within the Basin, or

(f) Any violation of the right to public participation and environmental justice in terms if this Protocol and any other relevant law applicable to the Basin, shall forthwith appoint eligible members of the Committee with power to consider and adjust such claim or controversy, subject to confirmation of such a decision by the Commission.

(g) Should the issue not be resolved at the level of the Committee the member states shall constitute an arbitration Board to arbitrate the matter in terms of laid down rules of arbitration.

(h) Should the arbitration fail or one party is not satisfied with the decision of the Arbitration Board, such aggrieved person shall have the right to

approach the SADC Tribunal or any other regional or international adjudicatory board with jurisdiction and agreed upon by the signatory states.

(2) Nothing herein contained shall prevent the adjustment of any such claim or controversy by any present method or by direct future legislative action of the interested States.

Further Provisions

(1) The Committee shall have the power to develop rules of procedure and principles in regards to:

(a) Special situations when joint projects between signatory states are involved.

(b) Amending conditions of environmental clearance certificate

(c) The holding of its meetings

(d) Amendments to the listed projects

(e) The conduct of public hearings

Article 14: Modification or Amendment

This Protocol may be modified or amended by action of the governing bodies of all of the signatory states in accordance with applicable law with the consent of the Commission.

Article 15: Termination and Individual State Withdrawal

(3) Termination or withdrawal from this Protocol shall be effected in terms of the provisions of the Agreement

IN WITNESS WHEREOF the undersigned being duly authorised thereto by the respective Governments, have signed this Agreement on this ……day of ……2013

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REPUBLIC OF ANGOLA

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REPUBLIC OF BOTSWANA

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REPUBLIC OF NAMIBIA

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