UNIVERSITY OF CAPE TOWN

Masters of International Relations Dissertation

Water Governance & International Cooperation over Trans-Boundary Water Courses in Southern Africa: The Case of the Okavango River Basin

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Abstract

This dissertation seeks to explore the core drivers of international cooperation over shared water courses particularly in Southern African, using the example of the Okavango River Basin as a case study. As a starting point it highlights the hydro-political context of Southern African, which is dominated by more than 21 shared water courses and faces significant challenges to its water sector namely through climate variability and population growth. In light of these pressing issues which could create a security complex for sovereign riparian states, international cooperation over trans-boundary water sources is imperative. Drawing on core theories of international relations, this dissertation suggests that cooperation between riparian states is a result of strong institutional frameworks, at a river-basin, regional and international level. Cooperation is further reinforced through development functionalism which plays an important role in facilitating cooperation through the advancement of regional development goals and initiatives. Finally, the dissertation explores the role of international norms of cooperation over trans-boundary water courses and the important role they play in fostering cooperation. Using the case of the Okavango River Basin, the dissertation suggests that in Southern Africa, the strongest driver of cooperation is strong legal and institutional frameworks, which once established, form the basis for sustainable cooperation for water diplomacy between riparian states. Cooperation over the Okavango River Basin and the twenty years of cooperation established between Angola, Namibia and Botswana through the Permanent Cubango-Okavango River Basin Commission (OKACOM) highlights an optimistic account for hydro-political cooperation over trans-boundary water systems between sovereign riparian states and provides a useful model for water basin agreements that are yet to be established. This thesis thus concludes that in light of the growing challenges facing the water sector in Southern Africa, strong institutions and legal frameworks are required to enhance cooperation among riparian states.

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List of Abbreviations & Acronyms

ANCOW- African Ministers Council on Water

AU - African Union

EPSMO - Environmental Protection and Sustainable Management of the Okavango River Basin Project

IPCC - International Panel on Climate Change

IWRM - Integrated Water Resource Management

JPTC - Permanent Technical Commission

NAP - National Action Plan

OKACOM - The Permanent Cubango-Okavango River Basin Water Commission

PJTC -Permanent Joint Technical Commission

RBO - River Basin Organisation

RSAP - Regional Strategic Action Plan

SADC - Southern African Development Community

SAP - Strategic Action Plan

TDA - Transboundary Diagnostic Analysis

UN - United Nations

UNCBD - United Nations Convention on Biological Diversity

UNFCCC - UN Framework Convention on Climate Change

1. Introduction

"Fierce national competition over water resources has prompted fears that water issues contain the seeds of violent conflict. But the water problems facing our world need not be only a cause of tension; they can also be a catalyst for cooperation...If all the world's peoples work together, a secure and sustainable water future can be ours"

-Kofi Annan, 2002[1]-

Forecasts predict that by 2025 approximately 1.8 million people around the world will be living in regions afflicted by absolute water scarcity[2]. By this time water withdrawals are also expected to escalate by 50 percent in developing countries, and 17 percent in developed countries, ultimately resulting in water-stress conditions with scarcity of renewable freshwater predicted for two-thirds of the world's population[3]. In light of the growing scarcity of water due to climate change and population growth pressures, and in conjunction with increasing demands on the consumption of water for energy, agriculture and food, water is becoming one of the most globally important and valuable resources. To this extent effective governance over water is essential in order to ensure the sustainability of global water supplies for future generations.

However, effective governance over water sources is complicated due to the heavy incidence of trans-boundary water sources that dominate the hydro-political landscape globally, with approximately 60% of all freshwater running across national border basins[4]. This heavy dominance of shared water courses has the potential to act as a catalyst for cooperation between riparian states in terms of the management of shared water courses. However, many scholars and global politicians have alluded to the increased potential for conflict and inter-state tension that may arise from varying national water plans which stand as a bulwark for international cooperation over trans-

[1] Kofi Annan, Address on 'Water for World Development' for the 'World Day for Water', 22nd March 2002.
[2] UN Water. 2009. 'Water Statistics: Water Report'.
[3] Ibid.
[4] Mikhail Gorbachev, 'The Unity of Water: Mikhail Gorbachev Urges the International Community to Get Serious about Governing Cross-Border Riparian Flows', *Project Syndicate.* Accessed from http://www.projectsyndicate.org/commentary/mikhail-gorbachev-urges-the-international-community-to-get-serious-about-govering-cross-border-riparian -flows

boundary water courses. This is illustrated by the relatively low number of water agreements that exist globally over shared water courses. It is estimated that of the 261 river basins shared between two or more countries, only 55 of these are governed by joint water management treaties[5].

Focusing specifically on the African continent there has been a heavy incidence of cooperation over shared water courses in Southern Africa. In the Southern African Development Community (SADC) region, water resources are essential as they meet the basic needs of more than 260 million people in the region, as well as sustaining a wealth of diverse ecosystems that are essential not only for its population, but its biodiversity[6]. Within the SADC region there are 12 mainland states which are connected by 21 river basins that traverse national borders, of which 15 are highly significant for socio-economic development[7]. These river basins cover 70% of the land area in the SADC region[8]. In addition estimates suggest that approximately 70% of the region's fresh water resources are shared between two or more member states[9]. This heavy incidence of trans-boundary water sources has resulted in a number of international water basin agreements between various members within the SADC region. Of particular significance is The Permanent Okavango River Basin Commission (OKACOM) which celebrated its 20th anniversary in 2014. Twenty years of sustained cooperation between Angola, Namibia and Botswana is an impressive feat and one that needs to be acknowledged, analysed and understood within the framework of International Relations in order to encourage cooperation over trans-boundary water courses in other regions where water agreements have yet to be established. The Nile River Basin is one such example where there has been a distinct lack of riparian cooperation and political will. As such an overarching joint water

[5] The Permanent Okavango River Basin Commission (OKACOM), 'Fact Sheet for the Cubnago-Okavango River Basin', *OKACOM Landing Page.* Available at: http://www.okacom.org/okavango-fact-sheet/okavango-facts-4/view Date accessed: 14th September 2014.
[6] Regional Strategic Action Plan on Integrated Water Resources Development & Management (2011-2015). *SADC*, pp. 1.
[7] Turton, A. 2010. 'New Thinking on the Governance of Water and River Basins in Africa: Lessons from the SADC Region', *SAIIA Research Report*, no. 6, pp. 8.
[8] Stephan, H & Bridgeman, M. 2012. Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa in the 21st Century: From the Old World to the New*. Cape Town: Renaissance Press, pp346.

[9] Ibid., 4.

management agreement has yet to be formalised between the ten riparian states over this important shared water system. This has resulted in an escalation of certain tensions between states, most notably between Egypt, Ethiopia and Sudan.

In light of the growing pressures that result in water insecurity globally, and especially within Southern Africa, it is important to gain an understanding into cooperation over shared water courses and what drives international cooperation over trans-boundary water sources, particularly in regions where water scarcity is rife. The importance of gaining this insight may help to ensure that cooperation between states over watercourses can be fostered where water basin agreements have not yet been established and help to preserve those agreements that have already been established.

1.1 Overview of the Literature: Our State of Knowledge

Within the realm of International Relations and Environmental and Development Studies, a well-established link between resource scarcity, poor governance of resources and conflict has emerged, resulting in the conventional wisdom that there is a directly proportional relationship between resource scarcity and conflict[10]. Water, like many other non-renewable resources, has been posited as yet another finite, and in some instances notably scarce, resource which has been linked to local, intra-state and inter-state conflict. The focus of this dissertation and the literature explored will be on international conflict and cooperation, as opposed to localised tensions.

Water is an absolutely essential resource for human existence and survival with an increasing variety of often conflicting demands on its usage. It fluctuates both in time and space, often running contrary to political boundaries. As a result of water's diverse uses, its trans-boundary flow, and its importance for human life, there exists a vast expanse of literature which explores the governance of water and the inextricable link between water and politics. This literature review will seek to explore the development of the literature on water governance, insecurity, and the cooperation and conflict dichotomy. It will highlight early streams of thought within the literature which centred

[10] For example Tedd Gurr (1985); Ronnie D. Lipschutz (1989); Thomas F. Homer-Dixon (1991).

around the idea of water wars; and thereafter explore more recent literature which has advocated for the more likely incidence of cooperation over water as opposed to conflict. Finally this review will conclude by focusing on the water-food-energy-climate nexus and the increased focus on and imperative for cooperation in light of the growing challenges of climate change and population growth.

Early literature and 'water wars'

There exists a vast expanse of literature which explores the topic of water insecurity and conflict. From the late 1980s towards the end of the 20th century, scholars were increasingly preoccupied with the idea of 'water wars' where the central argument pivoted around the belief that the next world war would be fought over water. This is in contrast to widespread belief in the 1950s which asserted that water was a source for peace and development, whilst oil was associated as the leading cause of resource-based conflict[11]. Towards the end of the 20th century scholars like John Cooley (1984), Arthur H. Westing (1986), Joyce Starr (1991), Wilfried Remans (1995) and Leif Ohlsson amongst others[12], posited that water was not only a historic factor for conflict, but extrapolated it as "*the* resource" which could result in war in the 21st century, based on the premise that "competition for limited…freshwater…[would lead] to severe political tensions and even to war"[13]. As World Bank Vice-president Ismail Serageldin asserted, "the wars of the next century will be about water"[14].

The argument for water as the most likely renewable source of political tension and conflict was based on evidence from numerous case studies examined that were found predominantly in the Middle East, with the Jordan and Nile rivers as examples, along with other cases scattered

[11] Wescoat, James L., Jr.1992. "Resource management: oil resources and the gulf conflict," Progress in Human Geography vol.16, no. 2, pp. 243-256.

[12] Cooley, J. K. 1984. 'The war over water', *Foreign Policy*, 3-26. Starr, J. R. 1991. 'Water wars', *Foreign policy*, 17-36. Starr, J. R. (1991). Water wars. *Foreign policy*, 17-36. Remans, W. 1995. 'Water and War', *Humanitaires Volkerrecht.* Vol. 8, no.1.; Ohlsson, L. 1999. Environment, Scarcity and Conflict: A Study of Malthusian Concerns. Department of Peace and Development Research. University of Göteborg.

[13] Westing, A. H. 1986. 'Global Resources and International Conflict', *International Journal on World Peace*. Vol. 4, no. 4, pp. 110-112.

[14] Quoted from the New York Times, 10th August 1995.

throughout South Asia and South America found in the work of Peter Gleick (1993), Thomas F. Homer-Dixon (1994), Wilfried Remans (1995), Paul Samson and Bertrand Charrier (1997), Kent Butts (1997), Paul F. Diehl and Nils Petter Gleditsch (2001) and Kathryn Furlong, N. P.Gleditsch ,Harvard Hegre, Bethany Ann Lacina and Taylor Owen (2006)[15]. Many of these studies which have highlighted the link between water and conflict have been empirical in their frameworks and have been extensively global in their scope, using numerous case studies for comparisons that are extrapolated to a general and international level.

The core argument for water wars was built on the fact that water, as a vital resource for a nation's survival - both in terms of human security of its inhabitants survival to its economy - in arid and semi-arid environments, would create intense political pressure and a subsequent condition of 'water stress'[16], especially when shared between two or more riparian states. The literature on water and conflict ultimately draws out two main factors for conflict, which may act in unison or create tension in isolation:

The first being water scarcity, which fits neatly into the above-mentioned conventional wisdom that resource scarcity is directly related to increased conflict. Scholars like, Hendrix and Glaser (2007) as well as Diana Glassman, Michele Wucker, Tanushree Isaacman & Corinne Champilou (2011) have further reinforced the work of early scholars in this field by focusing on water-related conflict that has arisen from water scarcity as a result of climate variability, population growth, increased

[15] Gleick, Peter, "Water and conflict: fresh water resources and international security, " International Security vol.1, no.1, Summer 1993, pp.79-112.; Homer-Dixon, Thomas F, "Environmental scarcities and violent conflict: evidence from cases," International Security, vol. 19, Summer 1994, pp. 5-40.; Samson, Paul, and Bertrand Charrier, International freshwater conflict: issues and prevention strategies, Green Cross, 1997. Draft Report.; Butts, Kent, "The strategic importance of water," Parameters , Spring 1997,pp.65-83.; Paul, F. Diehl & Nils Petter Gleditsch (eds.), 2001. *Environmental Conflict: An Anthology.* Colorado, Westview Press, pp. 1-352.

[16] The term 'water stress' was initially coined by Malin Fallenmark, to be used in conjunction with his 'Fallenmark Index' to measure water scarcity. See Fallenmark, M. 1989. "The massive water scarcity now threatening Africa: why isn't it being addressed?." *Ambio*, pp. 112-118.

demand for water from industrial sectors and often the mismanagement of resources[17]. The growing tensions over water as a result of climate change and urbanisation have ensured that the topic of water diplomacy has remained relevant and important, specifically with regard to ensuring that cooperative efforts supersede conflict.

Trans-boundary water courses as a source of conflict

A second cause of water conflict which has emerged in more recent literature is the trans-boundary nature of certain water systems. With a more regional focus, scholars like Anthony Turton, Peter Ashton, Aaron Wolf and Tamiru Abiye throughout their extensive research, have suggested that tension over shared water courses may emerge as a result of disagreements as to their equitable division among upstream and downstream riparian states. Abiye (2014) suggest that tensions here may arise purely as a result of a lack of political will to cooperate, with states unwilling to cede their sovereign and 'riparian right'. Scholars who have emphasized the importance of trans-boundary water systems in the water-conflict paradigm have focused on conflict resulting from poor governance of shared water sources and a lack of political will to cooperate with other riparian states to ensure sustainable usage of trans-boundary watercourses.

An important contribution to this stream of thought within the literature pivots around the Security Complex Theory, as put forward by scholars like Barry Buzan (1991, 1998) and Michael Schulz (1995)[18]. Using the Security Complex Theory, scholars suggest that if trans-boundary water courses are inherently linked to riparian states' national security concerns (human and economic) and issues of high politics, securitization of water resource management could result. Securitization of water ultimately entails the unwillingness of riparian states to cooperate, whether it is through the

[17]Glassman, D., Wucker, M., Isaacman, T. & Champilou, C. 2011. 'The Water-Energy Nexus: Adding Water to the Energy Agenda',World Policy Institute.

[18] Buzan, B. 1991. *People, States & Fear: An Agenda for International Security Studies in the Post-Cold War Era.* Harvester Wheatsheaf. ; Buzan, B., Waever, O. & de Wilde, J. 1998. *Security: A New Framework for Analysis*. London: Lynne Rienner.; Schulz, M. 1995. 'Turkey, Syria and Iraq: A Hydro-political Security Complex', in Ohlsson, L. (Ed.) *Hydro-politics: Conflicts over Water as a Development Constraint*. London: Zed Books.

absence of water usage and development agreements, or the reluctance to share important hydrological data and information. This has been seen predominantly in the Middle East North Africa (MENA) region as explored by scholars like Ann Mosely Lesch (1992), Jeroen Warner (1996) & John Anthony Allan (2000)[19]. The securitization debate over water resource management calls to mind Robert Putnam's two level-game theory (1988), which in turn becomes pertinent to the debate on water insecurity, conflict and cooperation, as states have to carefully choose between national pressures and interests that may not be in alignment on a regional level with other riparian states[20].

It is important to highlight these distinctions in causes of water conflicts so as to avoid painting the problem of water insecurity and conflict with one broad brushstroke that neglects, and is insensitive, to a variety of complex factors. Africa has been a particularly pertinent example on a regional level due to the large number of trans-boundary water sources that exist. The large presence of cross-border water systems on the African continent is due to the legacy of colonialism that saw the creation of artificial borders running contrary to natural water sources and ethnic ties[21]. Regions which have been dominant in this area of the literature have been North and East Africa, with on-going conflict and tensions pertaining to the usage of the Nile River Basin between its dependent riparian states: Egypt, Sudan and Ethiopia. Southern Africa has also become a particularly pertinent example in the literature on water insecurity and conflict, especially as it contains 21 trans-boundary water sources, covering approximately 70% of the country's land[22]. The focus on the Southern African region is of particular importance as it combines a hydro-political landscape which is dominated by trans-boundary water systems, as well as being a particularly water-stressed region,

[19] Lesch, A.M. 1992. Transition to Palestinian Self-Government. Report of a Study Group of the Middle East Programme Committee on International Security Studies, American Academy of Arts and Sciences, Cambridge, MA: Published in collaboration with Indiana University Press, Bloomington and Indianapolis.; Warner, J. 1996. De drooglegging van de Jordaanvallei, in Transaktie, Vol. 25, No. 3; 363-379.; Allan, J.A. 2000. The Middle East Water Question: Hydro-politics and the Global Economy. London: IB Tauris. ;

[20] Putnam, R. D. "Diplomacy and domestic politics: the logic of two-level games." *International organization* 42.03 (1988): 427-460.

[21] Stephan, H. & Bridgeman, M. 2012. 'Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa: In the 21st Century From the Old World to the New.* Cape Town: Renaissance Press. Pp. 345.

[22] Ibid.

which has historically culminated in certain tensions between riparian users, as was seen in the early 1990s over the Okavango River Basin running through Botswana, Angola and Namibia[23].

The 'conflict vs. cooperation dichotomy'

Whilst early literature posited that conflict over water was inevitable and ever "looming"[24], based on historical evidence and the ever-increasing threats of climate change and urbanisation, scholars have recently begun to move away from this mind-set and are becoming increasingly focused on the potential for water to act as a catalyst for cooperation. Heavyweight scholars within the field of hydro-politics like Turton, Wolf and Ashton have shown through their research that cooperation over trans-boundary watercourses is a far more likely outcome than conflict. They counter the arguments of scholars like Schulz and Buzan, who argue for the ultimate securitization of water resource management, as they suggest that cooperation is the "only way" for water resource management[25]. Scholars like Wolf, Turton and Ashton throughout their research have shown that cooperation is an achievable and ultimately inevitable outcome of water governance. In addition they suggest that the incidence of water conflict resolution is in fact much higher than the outbreak of conflict over water and refute the argument that water wars are inevitable, especially when based on the disingenuous extrapolation of historical evidence alone. These scholars have shown through various case studies that cooperation can in part be achieved and sustained through the institutionalisation of cooperation through 'water regimes' which once they have been established, become resilient to breaking down. In addition they highlight the importance of international and regional legal frameworks which provide guidelines for riparian users on the joint management of trans-boundary water systems.

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[23] Ashton, P. 2003. 'Southern African Water Conflicts: Are they inevitable or preventable?', *The Water Wheel.* Pp.2.

[24] Ashton, P. 2003. 'Southern African Water Conflicts: Are they inevitable or preventable?', *The Water Wheel.*

[25] Turton, A. Informal interview conducted on the 4th August 2014.

The Water-Food-Energy-Climate Nexus

The debate over the conflict-cooperation dichotomy has become even more pertinent in recent years with the development of the discourse surrounding the 'water-food-energy-climate' nexus. The Bonn2011 Conference on 'Water, Energy and Food Security Nexus' cemented the importance of this nexus within the realm of natural resource governance[26]. This nexus ultimately suggests that water, food, energy and climate change are inherently linked to one another and therefore promotes sustainable development and usage of water in order to secure the demands on water from the food and energy sectors, particularly in light of the growing challenges presented by climate variability[27]. With the world's population reaching almost 8 billion in total, and with greater demands for food and energy to support greater expectations for improved living standards, the focus on water governance and management between riparian states has been reignited. Whilst recent scholars have suggested it is disingenuous to suppose that 'water wars' will be inevitable based on historical incidences of conflict over water, the unprecedented levels of demand on the world's decreasing clean water supplies have caused scholars to rethink the possibility and potential increase in tensions over water. The growing importance of water within this nexus is the crux of this dissertation's aim. While there have been some attempts to understand cooperation in Southern Africa given the high levels of water scarcity, it would seem that there is room to develop on the literature to gain a full understanding of what drives cooperation, particularly in light of the challenges of climate change, population growth and increased demand for water for energy production. This research project wishes to reignite the focus and reinforce the importance of cooperation especially with the increasing pressures facing global water sector today. In doing so this paper seeks to explore the core drivers of cooperation in order to assist riparian states in establishing cooperation or enhancing already established cooperative efforts.

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[26] Hoff, Holger (2011). 'Understanding the Nexus.' Background Paper for the Bonn2011 Conference: The Water, Energy and Food Security Nexus. Stockholm Environment Institute, Stockholm.

[27] Ibid.

1.2 Research Aim & Question

In light of the literature that exists surrounding the topic of water insecurity and cooperation particularly within Southern Africa, this research paper will seek to understand what drives international cooperation over trans-boundary water sources, drawing on the experience of the case study of the Permanent Okavango River Basin Commission (OKACOM) and its water agreement which governs the joint management of the Cubango-Okavango River Basin, flowing through Angola, Namibia and Botswana. This dissertation will subsequently strive to contribute to the literature on water scarcity and international cooperation by examining the drivers of cooperation in the case of OKACOM and relating it to various theories of international relations, including regional development integration (development functionalism), neoliberal institutionalism, and norms theory within a constructivist approach. In doing so this dissertation will attempt to answer the following explanatory research question: What drives cooperation over trans-boundary water sources in Southern Africa? In conclusion this dissertation will seek to provide recommendations for this cooperation to be sustained.

1.3 Research Design & Methodology

In order to gain an understanding into the high levels of riparian cooperation in Southern Africa this dissertation will take the form of an explanatory analysis, using theories of International Relations coupled with case-specific information to explain the core drivers of this cooperation. In addition to this, and to aid this explanatory analysis, this thesis will analyse the various policies that exist at the international level, regional and local level, namely the UN Water Convention; SADC's PSWS and RSAP strategies; as well as OKACOM's own river basin agreement. This dissertation will seek to descriptively highlight water pressures in the SADC region in general, in relation to the food-energy-climate nexus, and how these pressures can result in potential inter-state tensions over cooperation in Southern Africa.

Thereafter, this contribution will make use of existing literature which explores the relationship between conflict and water insecurity in the SADC region, in order to gain an understanding into the common factors which drive cooperation in the region. Thereafter this work will delve specifically into the case of the Okavango River Basin to highlight and further expand on the drivers of cooperation over trans-boundary water courses in the SADC region. Primary sources of water agreements and policy strategies in conjunction with information, data and statistics on the Cubango-Okavango River Basin will be used to aid in this explanatory analysis. Finally, informal interviews with specialists in the field of hydro-politics will be conducted in order to gain more insight into what drives international cooperation over shared water courses in light of increasing pressures resulting in water insecurity in the region.

1.4 Relevance of Study

2014 marked the twentieth anniversary of the ratification of OKACOM agreement which governs the management of the Okavango River which runs through Angola, Namibia and Botswana. Before the agreement was reached in 1994, there existed a large degree of tension between these three riparian states as to the use and governance over this water basin which spans 1,100km. However, with extensive negotiations these three countries successfully formulated an agreement over the governance of the Okavango River. Like the numerous other water basin agreements that exist in the SADC region, OKACOM is a valuable example of the ability of riparian states to use trans-boundary water courses as a means for cooperation, as opposed to conflict. It is therefore important to gain an understanding of the drivers of international cooperation over shared water courses so that these lessons can potentially be applied to other regions where international water agreements have yet to be established and where the threat of conflict over water continues to loom. In addition the pressures on water are more significant than they were twenty years ago with the added challenges presented by climate change and the increased demand for water posed in the water-food-energy nexus. The need to prevent and avoid conflict and promote cooperation through water

diplomacy has become increasingly acknowledged as essential for enduring peace and sustained economic growth and improved human development. To this extent, and with the growing pressures facing global water resources, it is important that scholars and world leaders attempt to understand the ways in which cooperation over shared water courses can be achieved in such a way that respective national interests and the sovereignty of riparian states are respected.

1.5 Outline of the Dissertation

This dissertation will commence with an explanatory section which will highlight and conceptualise important themes and concepts to be dealt with in the dissertation. These include concepts such as cooperation, water insecurity and governance to name but a few. In addition this section will also highlight the hydro-political context of southern Africa, highlighting the various increasing pressures (climate change, population growth, and energy demand) its water sector faces, therefore illustrating the necessity for cooperation between riparian states as water insecurity rises.

After defining important concepts and providing an overview of the geographical and hydro-political context of the southern African region, this dissertation will delve into already-established theories of cooperation over shared water courses, focusing specifically on development functionalism; neoliberal institutionalism (including the importance of political will and trust); and norms within a constructivist approach . This section will also provide a critique on these theories, highlighting certain limits to these theories of cooperation over water resource management.

Thereafter this paper will delve into the crux of the analysis, using the case study of the Okavango River Basin to highlight which theories can most effectively explain the drivers of cooperation in the Southern African region and expand on our existing knowledge of what fuels international cooperation. This section will highlight the history of the Permanent Cubango-Okavango River Basin Commission (OKACOM), its origins, its current policies and joint management strategies and will use the case of OKACOM to bridge the divide between the theoretical and the practical realm in order to explain true drivers of riparian cooperation. This section will in turn use the example of OKACOM's

20th anniversary of water cooperation over the Cubango-Okavango River Basin, to provide recommendations for how international cooperation over shared water basins can be sustained in the future.

Finally, this dissertation will draw upon the main arguments made in the paper, highlighting the core drivers of international cooperation over trans-boundary water courses in theory and in practice using the case of the Cubango-Okavango River Basin and will draw conclusions as to how cooperation can be sustained in the future with ever-increasing challenges facing the world's water sector.

2. Overview of concepts and the hydro-political context of the Southern African region

Before delving into an explanatory analysis of international cooperation over shared courses in the Southern Africa region, particularly focusing on the case of the Cubango-Okavango River Basin, it is imperative that important core concepts that will be dealt with in this dissertation are conceptualised and expounded upon. These core concepts include 'water insecurity', 'cooperation', and 'governance'. In addition it is important that an overview of the hydro-political context of Southern Africa and the challenges it faces are explored.

Concepts

Water Scarcity & Security

As a result of population growth and the subsequent increase in demand for water, food and energy, in conjunction with the alterations in hydrological balances caused by climate variability, water scarcity is becoming a significant global issue. According to the World Economic Forum, water scarcity is currently ranked as the third most concerning global risk[28]. Estimates suggest that by 2030 between 75 million and 250 million people in Africa will be dwelling in regions in which there is a high degree of water stress, potentially resulting in the displacement of up to 700 million people[29].

In light of the fact that water scarcity and security is becoming a significant global risk, it is important to accurately conceptualise just what is meant by water insecurity as a result of scarcity. In defining water insecurity, it is perhaps most useful to define it in terms of its inverse, namely 'water security'.

[28] World economic Forum, Global Risks 2014: Ninth edition. http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2014.pdf . Accessed 17th September 2014.
[29]Groupement d'Intérêt Scientifique (GIS), 3rd October 2013. 'Conference on Water Scarcity in Africa: Issues and Challenges'. Available at: http://www.gisclimat.fr/manifestation-scientifique/conf%C3%A9rence-%E2%80%9Cwater-scarcity-africa-issues-and-challenges%E2%80%9D . Date accessed: 17th October 2014.

Water security is defined by United Nations Water Convention as "the capacity of a population to safeguard sustainable access to adequate quantities of acceptable water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability"[30]. This is corroborated by David Grey and Claudia Sadoff (2007) who suggest that water security is an "availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies"[31]. Water security also encompasses "complex and interconnected challenges" that pivot around the sustainable management of water in order to achieve a greater sense of security for states, as well as a high degree of sustainability of water sources and the usage thereof, in order to achieve greater levels of development and enhance the well-being and livelihoods of all peoples[32]. There are a number of factors and sectors which contribute to water security. These range from natural to infrastructural factors, as well as institutional, political, social and financial spheres, which all to some extent are intricately linked to the sustainable management of water. As such ensuring a state of water security necessitates cross-sectoral collaboration which extends across all levels of society at a national level and across internationally marked borders.

Water insecurity can therefore be conceptualised as a situation whereby there is a lack of adequate quantity and poor quality of water that threatens the well-being and livelihoods of citizens, environments and economies.

[30] UN-Water, 2013. Available at: http://www.unwater.org/topics/water-security/en/ . Date Accessed: 17th October 2014.
[31] Grey, D. & Sadoff, C. W. 2007. 'Sink or swim? Water security for growth and development', *Water Policy.* Volume 9, pp. 545-571.
[32] Ibid.

Cooperation

As identified in the review of the literature, water has, throughout history, been a source of tensions and even conflict between its usage and its users, especially in cases where water systems traverse sovereign boundaries. As water is becoming increasingly scarce, resulting in water insecurity becoming a globally pressing risk, there are emerging concerns that trans-boundary water courses have the potential to become a serious cause of tensions between sovereign riparian states, in turn impairing socio-economic development. Conversely, there is a budding consensus that trans-boundary water courses can act as catalysts for peace and cooperation, which in turn can support regional integration, drive economic growth and the sustainability of regional water security[33]. In order to effectively contribute to the debate on trans-boundary water courses and their potential for cooperation over conflict and in order to understand what drives cooperation, it is important to garner an understanding of what is meant by cooperation.

Cooperation is a notoriously complex concept which is regarded differently depending on the various fields of academia under review. In terms of natural resource governance there are various conceptions of what cooperation entails. According to scholars like Aaron Wolf, Shira Yoffe and Mark Girodano (2003), the "pinnacle of cooperation" is the formulation of international agreements and treaties[34]. However, other scholars like Elizabeth Kistin (2007) have suggested that cooperation should be conceptualised beyond the establishment of treaties and should be understood as a dynamic, "on-going" and "non-linear" process in which states and non-state actors "establish, challenge, modify, and legitimise multi-layered governance structures"[35]. It is suggested that some degree of tensions are necessary in the negotiation process to achieve "real" cooperation, as often treaties, while striving for the advancement of human and ecological security often are established

[33] Ibid., 547.
[34] Wolf, A., Yoffe, T., Girodano, M. 2003. 'International Waters: Identifying Basins at Risk', *Water Policy.* Vol. 5, no. 1, pp. 30.
[35] Kistin, E. 2007. 'Transboundary Cooperation in SADC: From Concept to Implementation', *Paper Prespared for the 8th WaterNet/WARFSA/GWP-SA Symposium.* Lusaka, Zambia.

to achieve national development agendas[36]. Scholars like Robert Falkner (2003) have suggested that cooperation goes even further in that it requires the "adjustment of individual behaviour to achieve mutually beneficial objectives"[37].

This often makes cooperation particularly difficult to achieve as sovereign states ultimately have to engage, in what Robert Putnam famously termed, a 'two-level game'[38]. States playing Putnam's two-level game have to effectively balance national duties and pressures in order to garner continued political support from domestic constituencies; whilst at the same time adhering to international obligations that may oftentimes be in conflict with domestic pressures and agendas. Cooperation becomes particularly elusive in situations where the gains of shared resources are asymmetrically distributed between sovereign riparian states, often resulting in competitive as opposed to cooperative behaviour between riparian states.

This raises another interesting aspect of cooperation: the degree of cooperation. The extent of cooperation is important and often contested among scholars with some asserting that even slight cooperation can be classified as cooperation. As the 2006 UN Development Report stated, "cooperation over trans-boundary waters, need not always be deep - in the sense of agreeing to share all resources and engaging in all types of cooperative ventures - for states to derive benefits from rivers and lakes. Indeed, given the strategic political and economic contexts in international basins, it makes sense to promote and support cooperation of any sort, no matter how slight"[39]. This dissertation will not deal specifically with the degree of cooperation through the identification of cooperation based on established scales and criteria. Rather this dissertation will adopt Mark Zeitoun and Naho Mirumachi's (2008) argument that cooperation and conflict should not be treated

[36] Zeitoun, M. & Mirumachi, N. 2008. 'Transboundary Water Interaction I: Re-considering conflict and cooperation', *Springer Science and Business Media,* pp. 14.
[37] Falkner, R. 2003. 'Private Environmental Governance and International Relations: Exploring the Links', *Global Environmental Politics*. Vol. 3, no. 2, pp. 73.
[38] Putnam, R.D. 1988. "Diplomacy and Domestic Politics: The Logic of Two-Level Games", *International Organisation*. Vol. 41, no. 3.: pp. 434.

[39] UNDP, 2006. 'Beyond Scarcity: Power, Poverty and the Global Water Crisis'*, Human Development Report.* New York, USA: pp 228.

as two dichotomous concepts on a single spectrum. Rather Zeitoun and Mirumachi suggest that cooperation should actually be re-conceptualised as "interaction", where there exists 'negative interaction', 'neutral interaction' and 'positive interaction', accurately accounting for the complex realm in which political decisions and strategies are taken by sovereign states that are often in competition with one another. Zeitoun and Mirumachi's conception of 'positive interaction' will form the basis for this paper's conceptualisation of cooperation. According to Zeitoun and Mirumachi, 'positive interaction' entails cooperation which is based on equal footing, spanning a range of issues where disagreements and tensions are minimized through planned procedures, negotiations, treaties and trans-boundary water regimes and organisations as well as benefit- and information-sharing mechanisms and platforms[40].

Cooperation in light of trans-boundary water courses and regional integration shall therefore be conceptualised in this paper as the political willingness of sovereign states to coordinate and harmonise their national policies pertaining to shared water systems through the establishment of various processes, negotiations, treaties, organisations and mechanisms which seek to share information and benefits of the shared water system. Ultimately cooperation over trans-boundary water sources in this dissertation refers to the creation of a shared vision, which goes beyond national development agendas and seeks to create mutual benefits for all riparian states.

Water Governance

Achieving water security through the development and management of water resources remains pivotal for economic growth, sustainable development and the reduction of poverty, particularly within the framework of the 2015 UN Millennium Development Goals (MDGs), which include poverty and hunger reduction, the lowering of child mortality rates, ameliorating maternal health, combating HIV/AIDS and malaria, ensuring environmental sustainability, and establishing global partnerships for development, all of which to some extent centre around minimizing water scarcity

[40] Zeitoun, M. & Mirumachi, N. 2008. 'Transboundary Water Interaction I: Re-considering conflict and cooperation', *Springer Science and Business Media,* pp. 14.

on a global and regional level through joint governance and management. According to the Organisation for Economic Cooperation and Development (OECD), water security and the emerging global water crisis is predominantly "a governance crisis"[41].

Water governance, as shall be conceptualised in this dissertation will refer to political, social, economic and administrative systems established to effectively develop and manage water resources at a national and international level across a multitude of sectors[42]. Water governance includes awareness and communication; education and capacity building; research and developmental stakeholder participation; and advocacy for water.

Governance also includes management strategies and policies that seek to better manage natural resources. Governance in relation to trans-boundary water systems includes the concept of Integrated Water Resource Management (IWRM), which is ultimately is the embodiment of a harmonisation of national policies and development agendas over shared water courses between riparian states.

Overview of hydro-political context of Southern Africa

"More than any other resource, water perhaps best demonstrates the idea of Southern Africa as a region rather than a collection of autonomous states demarcated by arbitrary boundaries"

Harry Stephan & Michael Bridgman

Trans-boundary Water Systems in Southern Africa

Trans-boundary water courses dominate the hydro-political landscape of Southern Africa, and Africa at large. At a continental level Africa has 64 river basins that traverse across international political borders. This is due in part to Africa's colonial legacy which resulted in the demarcation of artificial

[41] OECD, 2011. "Water Governance in OECD Countries: a Multi-level Approach".
[42] SADC, 2012. Climate Change Adaptation in SADC: A Strategy for the Water Sector, pp. 16.

international political boundaries across ethnicities and hydrological systems, to suit the desires and pursuits of colonial powers[43]. Southern Africa's hydro-political geography is dominated by a large number of trans-boundary water systems that flow between twelve very unique countries, characterised by different development trajectories, political legacies, legal systems and a diverse set of natural resources[44]. As mentioned previously there are 21 river basins which link the 12 inland states subsumed within the SADC region. Of these, 15 are considered to be of extreme importance for economic development, as a large number of them fall within the four most economically prosperous nations, namely South Africa, Namibia, Angola and Zambia[45]. Approximately 70% of the region's fresh water resources are shared between two or more SADC member states[46]. This is illustrated in Figure 1 alongside. Despite the heavy incidence of 21 trans-boundary water courses in Southern Africa, there exist only 9 formally established water basin agreements that seek to ensure cooperation between riparian states and the harmonisation of their national water policies. These water basin agreements include *the Inco-Maputo Tripartite Permanent Technical Committee (TPTC)*, which governs the Incomati and Maputo

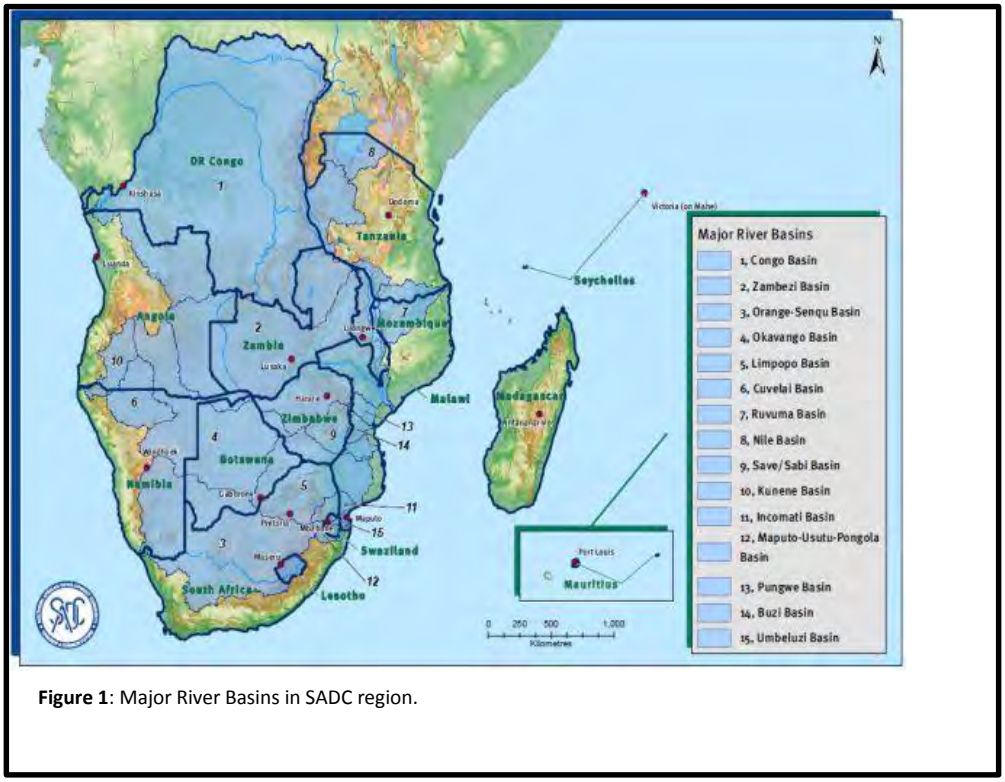

Figure 1: Major River Basins in SADC region.

[43] Turton, A. 2010. 'New Thinking on the Governance of Water and River Basins in Africa: Lessons from the SADC region', *SAIIA Research Report*, no. 6, pp. 8

[44] Ibid.

[45] Ibid.

[46] Ibid., 4.

Rivers running through South Africa, Mozambique and Swaziland; *the International Commission of Congo-Oubangui-Sangha (CICOS),* which governs the Congo River and its tributaries through the Cameroon, the Democratic Republic of Congo (DRC), Central African Republic (CAR) and the Republic of Congo; *the Kunene Permanent Joint Technical Commission (PJTC)* which presides over the Kunene River Basin through Angola and Namibia; *the Lake Tanganyika Authority (LTA),*over Lake Tanganyika Basin through Burundi, DRC, Tanzania and Zambia; *the Limpopo Water Course Commission (LIMCOM),* which governs the Limpopo River, one of the largest river basins in the SADC region, which runs through Botswana, South Africa, Zimbabwe and South Africa; *the Orange-Senqu River Commission (ORASECOM)*, which governs the Orange and Senqu rivers through Botswana, South Africa and Namibia; *the Permanent Cubango-Okavango River Basin Commission (OKACOM),* which jointly manages the Okavango River basin which runs through Angola, Namibia and Botswana; *the Ruvuma Joint Water Commission (Ruvuma JWC)*, which governs the Rovuma/Ruvuma River Basin running through the United Republic of Tanzania and Mozambique; and finally *the Zambezi Watercourse Commission (ZAMCOM)*, which presides over the Zambezi River connecting eight Southern African riparian countries.

This dissertation will be focusing specifically on cooperation over the Okavango River Basin between Angola, Namibia and Botswana through the Permanent Cubango-Okavango River Basin Commission (OKACOM). OKACOM and the hydro-political context of the Okavango River Basin will be discussed after a thorough understanding of the hydro-political context of Southern Africa has been established.

Due to the heavy incidence of trans-boundary water systems that characterise the hydro-political landscape of Southern Africa, joint management over shared river basins has become particularly important, especially as not all river basins garner equal benefits to riparian states in terms of the sustainability of local livelihoods and economic gains rendered[47]. This is further intensified by the

[47] Turton, 2010: 8.

fact that the trans-boundary water sources in the region fall between the Inter-Tropical Convergence Zone and the Southern Ocean, which act as the drivers of different weather and precipitation trends.

Water Scarcity & Water-Stressed States in Southern Africa

Southern Africa is a particularly interesting region to examine in terms of cooperation over trans-boundary water sources as it consists of the greatest number of water-stressed nations in any other region in the world, with 40% of the region's population unable to access clean and safe water with which to meet their basic human needs and proper sanitation[48]. This lack of safe drinking water has significant health and socio-economic implications with high rates of illness and death caused by poor and unsafe water quality as well as water-borne diseases. The increased risk of mortality arising from illnesses like cholera, keeps children away from school, hindering their education, and preventing members of the family from pursing more economically productive activities whilst they care for their sick relatives[49]. Challenges of water scarcity, sanitation and hygiene have become increasingly pertinent issues that need to be addressed particularly in light of global development targets that have been set to be attained in the next decade, as can be seen in global development agendas like the UN 2015 Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) of which development of water resources for ensuring water security is essential[50].

When one considers the high levels of water scarcity in conjunction with the heavy incidence of trans-boundary water sources that make up the hydro-political landscape of Southern Africa, it becomes clear that cooperation is a necessary requirement for effective governance and management of its regional waterscape as water is "the nexus of Africa's development challenges"[51]. Water resources in Southern Africa are crucial for sustaining the regions rich biodiversity, as well as

[48] UN Water: International Decade for Action, 'Water for Life: 2005-2015'. Available at: http://www.un.org/waterforlifedecade/africa.shtml.

[49] SADC, 2007. *Regional Water Strategy*, 'Water for Development and Poverty Reduction', pp. 17.

[50]

[51]SADC, 2012. Climate change Adaptation in SADC: A Strategy for the Water Sector, pp. 4.

meeting the needs of fourteen sovereign states and the 260 million people therein[52]. This need for cooperation will become even more crucial as climate variability, population dynamics, and poverty levels continue to grow.

Water & Climate Change in the SADC Region

According to the International Panel on Climate Change (IPCC), the Southern Africa region is particularly susceptible to climate change. Generally, the climate changes anticipated for Southern Africa are similar to those being experienced on a global level. Over the last few decades temperatures in the region have gradually been on the rise. According to the IPCC temperatures in the region have risen by over 0.5°C over the last 100 years[53]. Based on future climate modelling findings, it is projected that the region's climate will continue to become hotter and drier with mean temperature increases between 1°C and 3°C by 2080[54]. In addition Southern Africa has also experienced a downward trend in rainfall, exemplified in rainfall that is below normal with more frequent spells of drought. Patterns of precipitation have also been forecast to change in their intensity and frequency, resulting in more extreme events of flooding and even more prolonged periods between rainfalls[55].

Water is perhaps the most prominent resource through which the impacts of climate change take effect as global warming transforms hydrological patterns which determine the availability and quality of water. Climate change can therefore be seen as a "threat multiplier", aggravating already-existing threats on fresh water resources and the management thereof, as climate change increases water stress in arid areas as well as undermining the water quality in areas which have experienced flooding. According to evidence found by the IPCC, the overall effect of climate change on global water resources and freshwater ecosystems will be negative as a result of the decreased quantity

[52] Regional Strategic Action Plan on Integrated Water Resources Development & Management (2011-2015). *SADC*, pp. 1.
[53] Ibid.,5
[54] SADC Policy Paper on Climate Change, 2012.
[55] SADC, 2012. Climate Change Adaptation in SADC: A Strategy for the Water Sector, pp. 5.

and quality of available water[56]. Climate change has already begun changing the geographic distribution, frequency and intensity of water-related hazards which threaten to undermine the resilience of poorer developing countries and their citizens to absorb loss and recover from disaster impacts[57]. In Southern Africa as average temperatures rise, the water cycle is being adversely affected by increased evaporation and changing precipitation patterns. In the region flooding is on the increase as more intense and frequent storms are being experienced. Climate-related floods pose a serious threat to national economies and sustainable development. At the same time water scarcity is also intensified through disrupted rainfall patterns, increased evaporation loss and increased water demand across all sectors. In its fifth assessment report, the IPCC alluded to a 90% probability that the extent of drought-affected areas will increase[58]. These climatic changes will also have serious adverse socio-economic impacts for societies and economies in Southern Africa, affecting key sectors such as water, agriculture, tourism, mining and energy. There are also significant adverse effects to health which are linked to climate change in Southern Africa including an increase in water-borne diseases and malaria where it is otherwise uncommon[59].

Due to the serious and often adverse effects of climate change throughout Southern Africa, joint water resource management strategies should integrate climate change adaptation into their policies to ensure that important ecosystems become less vulnerable to climate changes as well as to improve climate resilience in the region[60]. In addition cooperative efforts are essential over shared water courses in order to mitigate the effects of climate change so as to avoid further negative impacts from affecting the region's water sector and future development.

Population Dynamics in Southern Africa

[56] Ibid.
[57] Ibid.
[58] Ibid., 6.
[59] Ibid., 7.
[60] SADC, 2012. Climate Change Adaptation in SADC: A Strategy for the Water Sector, pp. 4.

Population growth in Southern Africa is increasing steadily at a rate of 2.7% per annum[61]. Increasing population dynamics necessarily warrant an increase in the demand for goods and services, placing increasing pressure on the water sector as a key sector for the production of agriculture and energy. Increased urbanisation will also increase demands for water-based goods and services as standards of living improve and as an increasing proportion of citizens migrate to urban areas. It is expected that water for energy production will increase by 50% globally by 2035 along with a global 70% expected increases in food demand by 2050[62]. While these are global estimates, it is clear that the demand for water will no doubt increase drastically in the next few decades, ultimately reinforcing the importance of cooperative water resource management. To deal with increasing pressures of population growth, it is essential that joint water management strategies over trans-boundary water systems are established in order to ensure that mechanisms are implemented to effectively manage these pressures and minimize the effects of diminishing water sources with growing populations.

Poverty in Southern Africa & Water for Socio-Economic Development

"Not only does water sustain life, it is an engine and catalyst for social-economic development"

Dr. Tomáz Augusto Salamão, Executive Secretary of SADC

In Southern Africa today, approximately half the population lives on less than US $1/day, reinforcing the fact that poverty remains one of the region's most serious and significant challenges[63]. Many rural populations depend on river basins running across national borders for their livelihood as water is consumed for drinking and food, for farming and agricultural needs, for livestock grazing, for building materials and for important medicinal plants. To ensure that this important resource is

[61] SADC Statistics Yearbook 2012. 'Population and Migration'. Available at: http://www.sadc.int/information-services/sadc-statistics/sadc-statist/ . Date accessed: 17th October 2014.
[62] United Nations World Water Assessment Programme. 2013.'Global water resources under increasing pressure from rapidly growing demands and climate change, according to new UN World Water Development Report'. Available at: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/WWDR4%20Background%20Briefing%20Note_ENG.pdf. Date accessed: 15th September 2014.
[63] SADC. 2014. 'Poverty Eradication & Policy Dialogue'. Available at: http://www.sadc.int/themes/poverty-eradication-policy-dialogue/ . Date accessed: 17th October 2014.

preserved for their well-being and livelihoods, as well as ensuring that the benefits do not shift away from the rural poor to those in higher income segments of society, it is essential that water-based development initiatives are correctly managed and do not deplete water resources in the region. With heavy emphasis placed on reducing poverty by half within the Millennium Development Goals (MDGs), it is essential that cooperation over trans-boundary water courses within the SADC region, is established in order to ensure that poverty levels of rural communities will not be subject to deterioration and to ensure that the ecological integrity of water courses is preserved for future socio-economic benefits to enrich the lives of those rural communities.

Water is a particularly important source of economic development as it is pivotal to boosting national economic development and reducing national poverty levels. This once again underscores the importance of cooperation between riparian states and the harmonisation of national policies and joint management strategies over trans-boundary water courses which must be prioritised.

Some scholars have gone so far as to say that the overall economic potential of the SADC region rests largely on and is determined by the availability of water[64].This argument, which suggests that water is of utmost importance to the SADC region from a developmental perspective, is premised on the knowledge that the majority of SADC countries are heavily reliant on water-based sectors, like agriculture and mining, to foster and enhance social and economic development[65]. An estimated 70% of Southern Africa's population relies on agriculture for the survival of their livelihoods[66]. Apart from driving economic development through large industries that depend largely on water, water also has a "catalytic role in SADC's development"[67]. It is evident through research and studies in this field that countries with improved access to clean water and sanitation services have higher annual growth rates (approximately 3.7%) when compared to similar countries suffering from water-stress

[64] Turton, A. 2010. 8.
[65] Caholo, J .S. 2011. 'Preface', *Regional Strategic Action Plan on Integrated Water Resources,* pp. v.
[66] Ibid.
[67] Ibid.

conditions (resulting in a lower growth rate of 0.1%)[68]. Creating governance strategies which emphasize the development and enhanced management of water resources also renders significant economic gains. It is estimated that improvements between US $15 and $30 billion in water resource management in developing countries can directly lead to annual income returns of more than US$ 60 billion[69].

Moving beyond the more traditional uses of water for agriculture, drinking water and industrial usage, water is also becoming a significant source of economic development in other sectors of the economy including tourism and hydro-electrical energy production, which has become increasingly sought-after in the quest to reduce carbon emissions and produce energy in a more environmentally friendly and sustainable way[70]. Water has also become important for growth in manufacturing and trade at a regional level, through growth corridors including Maputo, Beira and the Trans-Kalahari; as well as cross-border enterprises[71]. Water's potential to advance economic development in the region is effectively highlighted in the case of South Africa, in which 70% of South Africa's Gross National Product (GNP) stems from the four international river basins which flow through the country, directly and indirectly contributing to 90% of mining activity and electricity produced in the country[72].

The example above illustrates just how important the water sector in Southern Africa is for socio-economic development. In a region that is characterised by a large presence of cross-border river water sources, it is imperative that cooperation between riparian sovereign states is fostered and sustained in order to ensure that socio-economic development can continue to progress. As such, the adoption and implementation of policies which seek to promote good governance and

[68] Ibid.
[69] Ibid.
[70] Stephan, H. & Bridgeman, M. 2012. 'Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa in the 21st Century: From the Old World to the New*. Cape Town: Renaissance Press, pp. 347.
[71] Ibid.
[72] Ibid.

management over water resources has become a pivotal mandate of regional bodies like SADC, as well as sub-regional water regimes, in order to foster economic and social development.

After highlighting core concepts to be used in this dissertation; as well as exploring the hydro-political context of Southern Africa, including pressures faced, opportunities and potential for socio-economic development within the Southern African water sector, this thesis shall now explore the various theories to which international cooperation over trans-boundary water courses have traditionally been attributed. These include political will and trust; development functionalism; neoliberal institutionalism; and norms theory within a constructivist approach.

3. Theories of cooperation for trans-boundary water courses

From an exploration of the literature surrounding trans-boundary water courses and international cooperation it would appear that there exist three main theories expounding on the drivers of cooperation which can be applied to cooperation over trans-boundary water courses between sovereign riparian states. These theoretical frameworks include theories on regional development functionalism; neoliberal institutionalism, drawing on the importance of political will and trust; and norms theory within a constructivist approach. These theories will subsequently be explored in relation to hydro-political cooperation and joint management between riparian states over trans-boundary water sources cooperation and management.

Regionalism

Regionalism and theories of regional integration have been infused with links to cooperation between sovereign states. Cooperation over shared resources has been to a large extent influenced by regional integration that has come to existence through shared goals of regional socio-economic development. In order to fully understand the pivotal role that regionalism, and most notably development functionalism, has played in fostering cooperation between riparian states, it is important to understand the core tenets of regionalism and the various theories that emerge within this school of thought. This section will therefore delve into an explanation of regionalism, delving into 'old' and 'new' theories of regionalism, focusing specifically on development functionalism within new theories of regionalism, which this dissertation will argue is a significant driver of cooperation over trans-boundary water courses between regional riparian states.

'Old' Regionalism

Developed in the 1950s and 1960s, early theories of regionalism revolved around the European experience of regional integration. The processes involved here informed the assumptions of Ernst Haas, the founder of neo-functionalism, who postulated that regional integration led by economic motives, would eventually spill over into political integration between states[73]. This idea of 'functional spill over' strove to eradicate the artificial boundary between the economic and political realm and in doing so emphasized how economic drivers of integration could in turn result in political integration. This is illustrated in non-political institutions established, like the European Coal and Steel Community (ECSC), which in time transformed into the European Economic Community (ECC), and ultimately "locked" its member nations into processes of integration, in turn ensuring cooperation between states that transcended beyond the realm of economics and into political institutions[74].

In an African context, this type of regionalism, in which technical cooperation turns into political cooperation has not yet been fully transposed, as many regional bodies have been unable to foster effective regional integration. This inability has been attributed to a number of factors. Firstly, these low levels of regional integration are a result of the low levels of industrialization and technological capacity within post-liberation Africa[75]. Secondly, regional trade and political cooperation is more challenging due to the vast expanse of the regions in Africa, which are far larger than their European counter-parts. Finally, methods of old regionalism do not exemplify the African experience of regionalism as there is a certain degree of reluctance from African states to concede their

[73] Haas, E. 1958. *The Uniting of Europe.* London: Stevens.

Haas, E. 191964. *Beyond the Nation-State.* Stanford: Stanford University Press.

[74]Stephan, H. & Hervey, A. F. 2008. 'New Regionalism in southern Africa: Functional Developmentalism and the South African Power Pool', *Politeia*. Vol. 27, no. 3, pp :56

[75] Ibid., 57.

sovereignty and authority to regional bodies, as the struggle for independence under colonial rule still presents a significant psychological barrier to integration[76].

'New' Regionalism

A new wave of regionalism emerged in the 1980s along with the rise of neo-liberal economic theory in the international system and in conjunction with the denouement of the Cold War and the emergence of democratic transitions sweeping across the world. As opposed to old regionalism's state-centric approach, theories of 'new' regionalism focus on factors that have even greater prevalence for the process of regionalism. These include market forces, civil society's influence, private sector business relations, and transnational activist networks and informal cross-border relations[77]. 'New' regionalism is divided into two subsequent schools of thought: 'open regionalism'; and 'developmental functionalism', of which the latter will be argued as a significant driver of cooperation over trans-boundary water courses in Southern Africa[78].

Open Regionalism

'Open regionalism' refers to integration led by market forces, effectively applying the principles of neo-liberal economics at a regional level. As opposed to 'old' regionalism which was inward-looking, protectionist and the embodiment of self-reliance; 'new' regionalism is outward-looking and inclusive, stressing the importance of regional integration by breaking down barriers that exist to trade and investment[79]. Open regionalism emphasizes the importance of exports and extra-regional trade, which ultimately fosters economic efficiency and growth through the active participation in wealth-creating and maximising opportunities at a global level[80]. The core assumption of open

[76] Ibid., 58.

[77] : Hettne, B. 1999. 'Globalisation and the new regionalism: the second great transformation' in Hettne, B., Inotai, A., Sunkel., O. (eds.) Globalisation and the New Regionalism. New York: St. Martin's Press., pp. 45.

[78] Stephan, H. & Hervey, A. F. 2008. 'New Regionalism in southern Africa: Functional Developmentalism and the South African Power Pool', *Politeia*. Vol. 27, no. 3, pp :59.

[79] Ibid.

[80] Nesadurai, H. E.2003. *Globalisation, domestic politics and regionalism*. Routledge, pp. 237.

regionalism suggests that trade and investment, driven by market forces, non-state actors and the private sector, drives the regional integration of states into the global economy[81].

Development Functionalism

In a similar vein to open regionalism, development functionalism – often considered the "third way" of regionalism – acknowledges that market expansion has the ability to create important opportunities that enable firms to become competitive at a regional level, but also strives to resolve some of the challenges and failures of the market of open regionalism, for example the asymmetrical distribution of gains and productive capacity[82]. While open regionalism focuses on the importance of regionalism motivated by objective market forces, development functionalism stresses the significance of political cooperation between states, with states acting as the primary drivers of regional cooperation[83]. This theory pivots around the concept of developing states and promotes the idea that state intervention in the market is essential in order to advance national development agendas[84]. Regional projects, driven by states as opposed to market forces, are a central component of regionalism driven by development integration[85]. There are a number of other important components that characterise the process of development functionalism. Firstly, integration is fostered through social and economic development objectives, which seeks to improve national productivity in regional markets through "improved infrastructure, policy coordination, state loans and subsidy incentives"[86]. Secondly, development functionalism strives to create an equilibrium between certain discrepancies which exist between various member states (economic, technological etc.), through state-led corrective measures which aim to create an equal distribution

[81] Stephan, H. & Hervey, A. F. 2008. 'New Regionalism in southern Africa: Functional Developmentalism and the South African Power Pool', *Politeia*. Vol. 27, no. 3, pp :60.
[82] Stephan, H. & Bridgeman, M. 2012. 'Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa in the 21st Century: From the Old World to the New*. Cape Town: Renaissance Press, pp.325
[83] Stephan, H. & Hervey, A. F. 2008. 'New Regionalism in southern Africa: Functional Developmentalism and the South African Power Pool', *Politeia*. Vol. 27, no. 3, pp :59.
[84] Ibid., 60.
[85] Stephan, H. & Bridgeman, M. 2012. 'Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa in the 21st Century: From the Old World to the New*. Cape Town: Renaissance Press, pp.344
[86] Ibid., 328.

of the gains of socio-economic development initiatives[87]. Development functionalism highlights the importance of equally distributing gains and the productive capacity of states, which is enhanced through inter-governmental cooperation[88] . Subsequently, this stream of regional integration reverts to Haas' core belief that economic integration will evolve into political integration. However, where Haas focused on market forces as imperative to economic integrations, development functionalism has been most notably a result of state-led initiatives, resulting in a multi-faceted approach to regional integration[89].This is particularly pertinent to regionalism in the case of Southern Africa.

Cooperation over Shared Water Courses and Development functionalism

In terms of cooperation over trans-boundary water courses it would seem that development functionalism provides a convincing framework for analysis, as countries that belong to a regional body or organisation will be more inclined to engage in cooperative behaviour than countries where there is a lack of regional solidarity, as cooperative behaviour has already been instilled upon becoming a member state. This is enhanced by transnational and multilateral development initiatives, including regional energy power pools, ameliorated communication and transportation networks, integrated water resource management (IWRM) and joint management of regional parks and protected areas, which span across sovereign boundaries in turn creating cooperative ties that move a region towards cooperation and peace[90].

In addition to creating development initiatives on a regional level, an important aspect of development functionalism is the emphasis placed on the equal distribution of gains and outcomes from joint regional management strategies. This is an important aspect to cooperation over trans-boundary water courses as equal distribution of gains and benefits derived from shared water systems for all riparian states, acts as an important and necessary incentive for cooperation.

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[87] Ibid.
[88] Ibid.
[89] Ibid., 332.
[90] Swatuk, L. A. 2003. 'Kant and Should: Strategic thoughts about wise use of the Okavango Delta System', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 124.

Upstream riparian countries will be more inclined to cooperate and refrain from upstream developments, which could jeopardise or affect downstream usage, if there are mechanisms in place to ensure that the gains from river basins are equally distributed among regional riparian states. Where basin-wide benefits are asymmetrically distributed, riparian states could be tempted to follow their own national interests and development agendas forsaking important basin-wide priorities and interests. Benefit-sharing is an important aspect of development functionalism and is changing the discourse on management over trans-boundary water systems from one of 'water-sharing' to 'benefit-sharing'[91].

Limitations of development functionalism

While benefit-sharing is a noble pursuit, it is quite an elusive goal to achieve as it is difficult in some cases to ascertain the actual and virtual value of water in a river basin system and to this extent, as shall be discussed in the case of the Okavango River Basin, has yet to established. This is perhaps the greatest limitation to the application of development functionalism as a driver of cooperation over trans-boundary water sources in Southern Africa. While regional development initiatives do help to cement cooperative relations, without effective mechanisms to share the gains of these initiatives, cooperation is unlikely to be prioritised over national interests or sustained in the long-run. However, establishing such benefit-sharing schemes would certainly enhance and aid the sustainability of cooperation as it would create further incentives for regional riparian members to cooperate and harmonise their national interests with neighbouring riparian states. It is therefore an important recommendation for riparian states and scholars to be cognisant of should they wish to enhance cooperation through development initiatives.

A further critique of development functionalism as a driver of cooperation over shared water resource governance is that states will only cooperate as long as it is in their national interest to do so. While cooperative efforts will be more likely if, joint development initiatives have been

[91] Ibid., 199.

embarked upon, it is perhaps more realistic to assert that development functionalism only drives cooperation as far as riparian states' national interests are served.

Finally, in contrast to optimists of development functionalism, who laud the efforts of regional bodies like SADC, there also exists a certain degree of pessimism towards SADC's efficacy in curtailing future water conflict in the region and fostering cooperation. This includes the opinions of Peter Ashton (2003), as well as Mark Zetioun and Jeroen Werner (2006), all of whom seem to suggest that regional bodies like SADC do not have the institutional capacity to effectively carry out policies and agreements established between all member states. There seems to be no legislative framework that can inflict punishments for cheating and following national interests above cooperative regional agendas, to this extent regional bodies like SADC are unable to effectively mitigate conflict or create sustainable cooperation between riparian states. These scholars have also highlighted this weak institutional capacity and have alluded to the fact that member states within the SADC region do not have any sort of mechanism in place to compel them to follow through with regional cooperation. This reverts again to the reference of Putnam's two-level game theory notion, as Ashton suggests that states have to balance national and international pressures, and often when faced with insecurities will choose short term national interests which sway away from cooperation and result in conflict and disputes between riparian member states.

Despite these limitations, development functionalism does provide a compelling account of how cooperation can be fostered in Southern African, and it is important that future literature seeks to develop on this reasoning especially as the SADC region continues to advance the region's geopolitical standing through development initiatives.

Neoliberal Institutionalism

In a similar theoretical paradigm, and quite closely linked to regional development functionalism, is that of neoliberal institutionalism which offers insight into actual international organisations,

structures and legal frameworks, which play a crucial and invaluable role in fostering cooperation among riparian states.

Neoliberal institutionalism is an offshoot of the liberal school of thought which emphasizes the cooperative potential of states, in particular mature democracies, especially when working together through effective institutions[92]. For an effective explanation, the assumptions of neoliberalism are often explained in reference to its adversary, neorealism. Neorealists assert that the international system is anarchic, therefore breeding uncertainty, competition and at times conflict between egoistic and value-maximising states, effectively stifling cooperative efforts. For scholars of neorealism, cooperation is considered unachievable in an anarchic system as states, being the most important actors, will weigh up the relative gains of cooperation, and being value-maximizers, will often resort to defecting as opposed to cooperating[93]. This defective behaviour is an attempt to gain more than their counter-part, subsequently resulting in zero-sum outcomes for both states and a consequent Prisoners Dilemma type of situation, as defined by game theoreticians[94].

Absolute gains facilitate cooperation

Like neorealism, neoliberal institutionalism agrees that the international system is indeed anarchic and does limit the achievement of international cooperation. However, scholars of neoliberal institutionalism hold a more optimistic perspective, asserting that while the international system is indeed anarchic, therefore constraining the "willingness of states to cooperate", the formation of institutions has the potential to increase the capacity of states to cooperate[95]. This assumption is premised on the belief that states are "atomistic" actors who seek to maximise their own gains and are apathetic to the gains of other states. In this regard absolute gains lessen the chances of

[92] Leading scholars who have advanced the theoretical assumptions of liberal institutionalism and neo-liberal institutionalism include Robert Keohane, Joseph Nye and Lisa Martin.
[93] Grieco, J. M. 1988. 'Anarchy and the limits of cooperation: A realist critique of neoliberal institutionalism', *International Organization.* Vol. 42, no. 3 pp. 487.
[94] Ibid.
[95] Ibid., 487.

cheating and enhance cooperative relations between states[96]. To this extent, institutions act as a coordinating body, helping states to seize optimal gains from cooperation. The construction of this "focal point" thereby enhances cooperative outcomes between states[97]. Ultimately institutions serve as a mechanism through which a greater degree of coordination and cooperation can be realised, in such a way that benefits both parties. This once again links in to the benefit-sharing framework that has overtaken the discourse on cooperation over trans-boundary water courses, as explored under development functionalism, suggesting that mechanisms which seek to enhance and equally divide benefits derived from basin systems are important drivers of cooperation.

Institutions as information-sharing platforms

In addition, international institutions are able to increase states' capacity for cooperation as they act as information-sharing platforms, effectively minimizing uncertainty and security risks that arise in the anarchic international system. Member states that join international organisations and adhere to international frameworks often come together on the basis of shared beliefs and values, formulating common rules which further reinforce the potential for cooperation[98]. Through the formation of a forum in which information can be shared among all states, opportunities for cheating are effectively minimized. In relation to cooperation and joint management over shared water resources, the sharing of hydrological information reduces uncertainty, creates confidence and results in the de-securitization of states, effectively enhancing cooperation among them[99].

Policy coordination & legal institutional frameworks for cooperation

Furthermore, a key element of international institutions is the formulation of coordinated policies and legal frameworks, which seek to create common rules to govern the activities of member states.

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[96] Ibid.
[97] Keohane, R. O. & Martin, L. L. 'The promise of instituionalist theory', *International Security.* Vol. 20, no. 1: pp. 45.
[98] Keohane, R. O. 1989. 'Neoliberal institutionalism: A perspective on world politics', *International Institutions and State Power: Essays in International Relations Theory*, pp. 1-20.
[99] Turton, A. 2003. 'The hydrological dynamics of cooperation in Southern Africa: A strategic perspective on institutional development in international river basins', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp.83.

Strong institutional frameworks, whether legally binding or not, are of utmost importance in enhancing cooperative relations between states. A key hypothesis in the work of Anthony Turton, Peter Ashton and Eugene Cloete, relating to cooperation over trans-boundary water courses, pertains to the number of policy options available. Their hypothesis asserts that cooperative relations will increase substantially in proportion to the number of coordinated policies established and available to states[100]. Importantly international laws surrounding the governance of water, which includes treaties, protocols, national policies and institutional legislation, are pivotal for efficient and effective cooperation and management of shared water systems[101]. Even when protocols and policies are not legally binding, the mere acceptance thereof by member states is sufficient for cooperative relations over water courses to ensue. A number of international, regional and national protocols and legal frameworks will be discussed in the following chapter in relation to those that are applicable to the case of the Okavango River Basin.

Political will & trust for the sustainability of cooperation

Institutions, water regimes, River Basin Organisations (RBOs) and the various agreements and protocols included within them, are important mechanisms for establishing confidence and trust between riparian states, rendering institutions as a critical element for sustainable cooperative and peaceful management over and utilisation of trans-boundary water courses[102]. The establishment of political trust is a particularly important aspect of neoliberal institutionalism which is an essential driver of cooperation among riparian states. One of the reasons institutions have become recognised as a key driver for cooperative relations between riparian member states, is their capacity to create political trust among shared water course users. Trust although abstract, is an extremely pivotal concept with regards to cooperation, because without mutual trust, it is unlikely

[100] Turton, A. Ashton, P. & Cloete, E. 2003. 'An introduction to hydro-political drivers in the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp.17.
[101] Ibid., 36.
[102] Turton, A. 2003. 'The hydrological dynamics of cooperation in Southern Africa: A strategic perspective on institutional development in international river basins', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp.84.

that cooperative efforts and coordinated policies can be established. Peter Ashton and Marion Neal assert that effective management and usage of shared water courses is highly dependent on mutual trust and the will to collaborate[103]. It is of course no mean feat to institutionalise the political will necessary to establish cooperation and subsequently develop trust among riparian states.

Finally, as argued by Aaron Wolf, institutions are critical for cooperation. He asserts that once institutions are established it is extremely difficult for countries to back out of established water regimes and abandon international obligations agreed to[104]. Wolf has even gone so far as to suggest, through evidence of water basin institutions like the Amazon, La Plata and the Mekong commissions, that even when relations among riparian states are strained, international institutions generally remain resilient to tensions and cooperation is sustained[105]. States come to value river basin agreements and organisations as they help to ensure that international relations over shared water courses are more stable and that peaceful diplomatic relations over water courses ensue. This stream of thought again reinforces the relevance of neoliberalism as a core theoretical framework with which to explain cooperation among riparian states over trans-boundary water courses.

There are a number of regional and international institutions which support the pursuit of cooperation over trans-boundary water courses, particularly pertaining to cooperation over the Okavango River Basin, which will be discussed in the following chapter.

Limitations to neoliberal institutionalism

Neoliberal institutionalism provides a particularly strong explanation for what drives and sustains cooperation over shared water courses. However, it would be replete not to mention certain downfalls to the theory of neoliberal institutionalism as an analytical framework of analysis for the

[103] AShton, P. & Neal, M. 2003. 'An overview of strategic issues in the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 31.
[104] Wolf, A. T. 2003. 'Conflict and cooperation within international river basins: the importance of institutional capacity', pp. 10.
[105] Wolf, A. T. 1998. 'Conflict and cooperation among international waterways', *Water* Policy. Vol. 1, pp. 262.

drivers of cooperation over trans-boundary water courses. Perhaps the most significant criticism of institutions as a driver of cooperation again stems from a pessimistic realist perspective which suggests that institutions act merely as a cover for states to pursue their own interests. Scholars like Coleen Fox and Chris Sneddon (2006) argue that while water regimes, institutions and the agreements ratified therein are legitimised as a way to enhance human security and the ecological integrity of the water source in question, they instead tend to promote "state-centric environmental securitization"[106]. To this extent they suggest that while these protocols seem progressive and grounded in international law, they are likely to be a guise for national interests that may include environmental degradation on a small, if not unnoticeable scale, which may become serious in the long term, creating "ecological and human security crises" if not recognised[107].

Another criticism of institutions as a driver of cooperation picks up on the legality of the agreements subsumed within the established water regimes. As mentioned in the critique of development functionalism, it would seem that it is difficult for protocols and their legislation to be effectively enforced and as such difficult to hold riparian states accountable should they defect from their obligations. Scholars like Aaron Wolf have suggested that this deficiency is exacerbated in the international realm by poorly developed international law, which is "unenforceable" and "contradictory" to certain national legislation[108].

Norms and conventions

The final theoretical framework and driver of international cooperation for shared water systems, is a normative approach under constructivism. International norms and conventions, linked to some extent to institutional legislation, protocols and policies established within water regimes, RBOs and other international institutions, are an important source of support for cooperation and to some

[106] Fox, C.A. & Sneddon, C. 2006. 'Transboundary river basin agreements in the Mekong and Zambezi basins enhancing environmental security or securitizing the environment', *International Environmental Agreements.* Vol. 7, pp. 237.
[107] Ibid.
[108] Wolf, A. 1998. 'Conflict and cooperation among international waterways', *Water* Policy. Vol. 1, pp. 263.

degree legitimise the need for cooperation over trans-boundary water courses. It is important to note the similarities between institutions and norms as there has been some degree of conceptual convergence between the two. Constructivists refer to 'norms' as behavioural rules, whereas sociologists refer to these behavioural standards as 'institutions'[109]. The concept of institutions has also been used to denote a "relatively stable collection of practices and rules defining appropriate behaviour for specific groups of actors in specific situations"[110]. However, a marked difference between a norm and an institution can be located in their scale: norms refer to distinct standards of appropriate behaviour; while institutions focus on the interaction and interrelation of behavioural rules and how they are connected together[111]. This dissertation ultimately views cooperation in the sociological sense as a mix of practices, policies and norms that come to fruition through states cooperating and coordinating national and regional policies; however, this specific section will focus on norms of cooperation within the international system and how these have sought to foster cooperative behaviour amongst riparian states with shared water resources, as a new pattern within international water politics.

Subsumed within a constructivist theoretical perspective, which emphasizes the importance of the social construction of ideas and values in conjunction with the influence of norms on international politics, norms established in the international arena play a significant role in shaping behaviour of actors in the international system[112]. Alexander Wendt, in direct contestation of the realist belief that anarchy stifles cooperation, suggests that anarchy is ultimately what states makes of it. To this extent norms and conventions which promote cooperation, and have been widely accepted and

[109] Finnemore, M. & Sikkink, K. 1998. 'International Norm Dynamics and Political Change', *International Organisation*. Vol. 52, no. 4: pp. 891
[110] March and Olsen, 1998. 'The institutional dynamics of international political orders', *International Organisation.* Vol. 52, no. 4.: pp. 943-969.
[111] Finnemore, M. & Sikkink, K. 1998. 'International Norm Dynamics and Political Change', *International Organisation*. Vol. 52, no. 4: pp. 891
[112] Ibid., 888.

internalised by the international community at large, are becoming the new standard form of appropriate behaviour amongst states who share resources across sovereign borders[113].

There appear to be three distinct types of norms that have been identified by scholars across a variety of academic fields. These categories of norms include: 'regulative' norms which constrain and instruct behaviour ; 'constitutive' norms which sees the emergence of new actors, behaviours and values; and finally 'prescriptive' or 'evaluative' norms which inform appropriate behaviour with a sense of what actors should do, as Finnemore and Sikkink so aptly phrased it, containing an element of "oughtness"[114]. Under a constructivist approach prescriptive norms form the essence of analysis. This section will suggest that there has been an increased emphasis on norms of international cooperation which have helped to reinforce and support cooperative efforts among states over shared water systems.

Before delving into these internationally established norms and convections that pertain directly to trans-boundary water cooperation, it is important to briefly highlight the life-cycle of norms in order to illustrate how they can ultimately influence behaviour and drive international cooperation between states. The extent to which norms are accepted, either at a regional or global level, depends on the stage of its life-cycle that a norm reaches. The first stage of the life cycle of a norm is the emergence of a norm that is created through norm entrepreneurs[115]. After the first stage there is a "tipping point" in which broad acceptance of a norm follows suit and is known as a "norm cascade"[116]. The final stage of a norm's life-cycle is the internalization of the norm, in which norms are no longer debatable or contested but have become so widely accepted that they are often taken for granted[117].

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[113] Wendt, A. 1992. 'Anarchy is what states make of it: The social construction of power politics', *International Organisation.* Vol. 46, no. 2: pp. 391.
[114] Finnemore, M. & Sikkink, K. 1998. 'International Norm Dynamics and Political Change', *International Organisation*. Vol. 52, no. 4: pp. 891.
[115] Ibid., 895.
[116] Ibid.
[117] Ibid., 896.

The norm of international cooperation over shared water courses can be said to have reached international internalization as there exist a number of international conventions which stress the importance of this norm. These include norms at an international and regional level.

At an international level there exist a number of conventions which have placed significant emphasis on the importance of international cooperation over shared water resources. These include the United Nations' International Decade for Action, 'Water for Life: 2005-2015', which has an intent focus on promoting trans-boundary water source cooperation for the sustainable usage of water sources for development and for the basic needs of people in light of the growing crisis of water scarcity; the declaration of 2013 as the 'International Year of Water Cooperation'; following on from 'World Water Day' in 2009 which was centred around the theme of 'Shared Waters, Shared Opportunities'; and finally the UN-Thematic Priority Area on Transboundary Waters which strives to act as a platform for cooperation and the coordination of activities and policies of member countries. The global recognition of the norm of cooperation over trans-boundary water courses has been further emphasized outside of pure water conventions, and through norms and conventions on climate change and human development. These include the United Nations Framework Convention on Climate Change (UNFCCC), as well as and the UN Millennium Development Goals (MDG) framework, in which both water, and the effective governance thereof are critical features.

Limitations of norms and conventions as drivers of cooperation

In a similar vein to the critiques of development functionalism and neoliberal institutionalism, norms and conventions are limited in their conception as drivers of cooperation as a result of the lack of enforceability of these norms in the international system. While norms may be internalised to such an extent that they become unquestionable and expected standards of behaviour, states which seek to advance their own national interests may defect from norms of cooperation, in turn disregarding their importance in the international system.

Furthermore, the fact that norms and conventions may be easily reneged on is reinforced by the fact that cooperation, as argued by Mirumachi and Zeitoun, has varying levels. As a result these norms may foster cooperation at a superficial level whereby states may agree to cooperate but do not in effect practically engage in cooperative behaviour with other riparian states. That fact that norms and conventions are not legally binding prevents states from fully committing to cooperative behaviour, as they are regarded as something that states *ought* to engage in, but if not adhered to, will not have major negative implications in their geopolitical standing.

Sub-conclusion of theories of drivers of international cooperation over shared water courses

This chapter has sought to highlight various theories within international relations which can be used to explain what drives cooperation over shared water courses across political boundaries. This section has highlighted that cooperation over trans-boundary water courses between riparian states can be attributed in general to regional development functionalism which strives to promote development both socially and economically at a regional level through development initiatives focused on shared water courses with an emphasis on equitable benefit-sharing. In addition, within the theoretical perspective of neoliberal institutionalism, institutions along with protocols, legislation and agreements established therein, are significant sources for cooperation as they foster cooperative behaviour as they serve as information-sharing, benefit-sharing and trust-building platforms between riparian member states. Finally, international cooperation over shared watercourses can be attributed to international and regional conventions which have internalized the importance of cooperation in order to achieve the harmonization of national riparian water policies and activities in order to sustain a number of global goals including climate adaption and mitigation; development goals; and high degrees of cooperation between states across all sectors.

The following chapter will subsequently analyse these various theoretical frameworks as drivers of cooperation with regards to the case of the Okavango River Basin, to identify what in practice has

been the most significant driver of cooperation. This will help to inform other regions in which cooperation has yet to be achieved and where efforts for cooperation over shared waters should be focused. In light of pressing challenges including climate change and population growth which have culminated in a global water scarcity crisis, it is important for the practicalities of these drivers to be assessed in order to ensure that these pressures do not lead to a the securitization of states' resources, whereby national interests and development agendas are prioritized over international obligations.

4. Drivers of Cooperation in the Okavango River Basin

After highlighting theories of cooperation that emerge from the literature, it now becomes pertinent to identify which of these theories is most significant and relevant with regards to cooperation over trans-boundary water courses in practice. Before applying the above theories to cooperation among Angola, Namibia and Botswana over the Okavango River Basin, it is important to understand the hydro-political character of the river basin; the socio-economic and political context of each of the riparian states; and their development agendas looking forward, which will certainly have a direct impact on the usage of the River Basin.

Overview of the Okavango River Basin

According to T.S McCarthy and W. N. Ellery, the Okavango River Basin is a classic example of a trans-boundary system in which both human and ecosystem needs are in competition for relatively scarce water supplies in a particularly arid region[118]. The delicate balance between basic human needs, national development and ecological preservation in a water

Figure 2: Map illustrating the Okavango River Basin flowing between Angola, Namibia and Botswana

[118] McCarthy, T. S. & Ellery, W. N. 1998. 'The Okavango Delta', *Geobulletin.* Vol. 36, no. 2: pp. 5.

stressed region has been effectively managed between its three riparian states Angola, Namibia and Botswana for twenty years, as the Permanent Okavango River Basin Water Commission (OKACOM) celebrated its twentieth anniversary in September 2014. The example of the Okavango River Basin therefore provides an interesting and relevant example for the application of theories of cooperation in order to assess which are the most significant drivers of cooperation on the ground. An understanding of the true drivers of cooperation in reality will help to establish cooperation over shared watercourses where it has yet to be formed. In addition, it will also help to enhance cooperation between already established water agreements and RBOs in light of the growing challenges of climate change and population growth, which seek to undermine cooperation and threatens a reversion to the securitization of riparian states.

Importance of regional cooperation for effective joint management of the Okavango River Basin

The Okavango River Basin is considered to be one of the last "near-pristine" aquatic ecosystems in Africa covering approximately 700,000m^2. Originating in Angola, the Cuito and Cubango Rivers merge at the border between Namibia and Angola, forming the Cubango-Okavango River which flows through the Kalahari Desert and subsequently spills out from the panhandle and into the Okavango Delta in north-Western Botswana. With its rich biodiversity that is perfectly synced to the biological cycles of numerous native plant, bird and wildlife species, the Cubango-Okavango River Basin is a globally significant river system of utmost ecological importance. In addition, the River Basin provides rural communities situated on the peripheries of the river system with numerous ecosystem services to support their livelihoods. These services include water, land for small-scale agriculture and livestock grazing, fish, reeds for thatching and medicinal plants. In addition the Okavango Delta, which flows downstream into north-western Botswana, is a significant source of income-generation from tourism, generating over US$ 866 million per annum since 2012[119]. The

[119] Michael J. Murphey. 2014. 'Botswana's Future Depends on the Protection of its Wildlife'. Available at: http://www.mmegi.bw/index.php?sid=2&dir=2013/March/Thursday7#sthash.Y3mSRA.Ue5BzVKi.dpuf.

Okavango River Basin is also significant as it contributes to the socio-economic development of all three riparian countries. Estimates show that the total amount of water abstracted from the River Basin annually amounts to 31.4Mm^3 [120].

Angola

After almost three decades of a stifling war of independence, followed by a protracted civil war ending in 2002, Angola has become increasingly dependent on water abstraction from the Cubango-Okavango River Basin as a means to boost economic growth and enhance the livelihoods of its population after war crippled the economy and left a "legacy of starvation" and the displacement of thousands of Angolan citizens[121]. Angola's renewed focus on economic development is embedded in the belief that a sustainable economic future will prevent the reversion to civil war. Angola has the highest level of water abstraction of the three riparian states accounting for 53.1 % of overall river basin abstractions, despite being relatively water rich as it straddles four other trans-boundary river basins: namely the Cunene, the Zaire, the Cuvelai and the Zambezi river basin[122]. Livestock and agricultural developments, particularly in the form of irrigation schemes, constitute the bulk of Angola's water abstractions from the River Basin.

As stated in its respective National Action Plan for the Sustainable Management of the Cubango-Okavango River Basin in 2011, Angola has expressed particular interest in developing two mini-hydropower stations to be built by 2016, in addition to the already existing hydropower plant situated at the Cubango River[123]. This could potentially threaten the hydrological character, water quality and future availability of water for lower catchments of the river basin and its riparian users. This in turn could undermine cooperative efforts if not properly reviewed by Namibia and Botswana.

[120] Cubango-Okavango River Basin Water Audit (CORBWA) Project Synthesis Report, 2014: pp. 32. Available at: http://www.fao.org/docrep/019/i3743e/i3743e.pdf
[121] Turton, A. Ashton, P. & Cloete, E. 2003. 'An introduction to the hydrological drivers in the Okavango River Basin' *Transboundary rivers, sovereignty & development: hydro-political drivers in the Okavango River Basin.* African Water Issues Research Unit, Pretoria: pp. 9.
[122] Cubango-Okavango River Basin Water Audit (CORBWA) Project Synthesis Report, 2014: pp. 32. Available at: http://www.fao.org/docrep/019/i3743e/i3743e.pdf
[123] Ibid., 33.

Namibia

Namibia, which is notably more arid, follows closely behind Angola and abstracts 42.5% of the Systems' total water[124]. There are four perennial rivers which flow through Namibia, including the Cunene River; the Cuando/Linyanti/Chobe River Basin complex; the Zambezi River and the Orange River. However, the Kuvango River Basin, as it is referred to in Namibia, is "the only exploitable perennial river" as all other perennial rivers are situated too far away from high water-demand areas[125]. The Okavango River Basin is thus of prime importance for water abstraction in order to meet Namibia's pressing water needs. In addition the Kuvango River Basin is also a key source of abstraction for Namibia's Green Scheme irrigation and cultivation project, which constitutes the majority of water abstractions for the country.

There are currently plans underway to revive a water-transfer scheme that would transport Kuvango surface water from Rundu to the Eastern National Water Carrier at Grootfontein, thereby supplying Namibia's main centres of demand[126]. This scheme effectively ensures that if existing internal water resources are exhausted, Namibia will be guaranteed of continued water supply from the Kuvango River.

Botswana

Botswana, in contrast, abstracts a mere 4.4% of the total annual riparian abstractions, with the majority of its abstractions used for livestock and domestic use[127]. In 2012, the new Boseto copper mine, which is situated in Ngamiland in the highly prospective Kalahari copper belt of north-western Botswana, began its operations and is expected to have use 1.3 Mm^3 of ground water annually, which would, in conjunction with other projected increases in water abstraction for livestock and

[124] Ibid., 34.
[125] Ibid.34.
[126] Ibid.
[127] Ibid., 35.

domestic use, effectively increase Botswana's total water demand to 14 Mm^3 from 12.65 Mm^3 [128]. While Botswana abstracts the least amount of water, the income generated from the Okavango Delta is significant, generating approximately US$866 million and creating 49,500 jobs in 2012 alone[129].

It is clear that the Okavango River Basin and its associated ecosystems are highly beneficial for all three riparian countries. To ensure that the ecological benefits of the Okavango River Basin are preserved, joint management and the effective harmonisation of and coordination between the national water policies of Angola, Namibia and Botswana are essential, especially in light of increased water abstraction projections and the challenges faced in terms of climate change and population growth.

Cooperation over the Okavango River Basin can provide useful lessons as to what drives and sustains cooperation in order to inform future cooperation over trans-boundary water courses regionally and internationally where water basin agreements are yet to be established. Upon close analysis of cooperation between Angola, Botswana and Namibia over the Okavango River Basin, it appears that three important drivers of cooperation emerge. These include: political trust; regional integration through development; and the presence of strong legal institutional frameworks and norms.

Challenges to cooperation over the Okavango River Basin

However, despite OKACOM's sterling track record of cooperation there are certain challenges which are beginning to emerge which could potentially undermine the sustainability of the twenty years of cooperation among Angola, Namibia and Botswana. It is important to highlight these challenges specifically in light of the theoretical analysis that will commence hereafter, as these challenges will reinforce which of these theoretical frameworks have been most significant in driving cooperation,

[128] Ibid., 37.
[129] Michael J. Murphey. 2014. 'Botswana's Future Depends on the Protection of its Wildlife'. Available at: http://www.mmegi.bw/index.php?sid=2&dir=2013/March/Thursday7#sthash.Y3mSRA.Ue5BzVKi.dpuf.

and which theories of cooperation have been less useful in the case of the Okavango River Basin, but could still be employed to advance and enhance cooperation among riparian member states.

Whilst cooperation over the Okavango River Basin provides a good model for trans-boundary resource management, there are still significant challenges that OKACOM faces to the sustainability of cooperation. These challenges include increasing pressures of river basin population growth (expected to increase from 921 890 to 1.28 million people by 2025); long-term variability and climate change impacts (including increased temperatures of between 2°C to 4°C and changes in rainfall); land use change; and high poverty levels in all three basin countries. In order to ensure that climate change and population growth do not adversely impact on the management of the Basin it is crucial that OKACOM sufficiently integrates climate change adaption into its basin management strategy.

In addition the political scene is changing with all the three riparian countries becoming increasingly geared towards expanding their economic prospects, thus resulting in expected increases in water abstraction for developments and subsequent increases in water demand to over 400 Mm^3 and up to 4000 Mm^3 in certain projected future scenarios[130]. This raises two important questions: firstly, how does this demand compare to the scope of the 'development space' vis-à-vis the optimal allocation of water for withdrawal and use for the overall system; and secondly, how to share these benefits equitably among Basin member states.

A further challenge is the asymmetrical distribution of benefits which each river basin country derives from the Okavango River Basin. In 2014 figures shows that the total Gross National Income of the entire Okavango Basin amounts to US$ 234 085 700. Of this, Botswana generates US$ 177 317 500, predominantly from its booming tourism industry in the Delta, whilst Angola and Namibia derive US$ 13 563 700 and US$ 43 204 500 respectively[131]. A pertinent issue which

[130] Cubango-Okavango River Basin Water Audit (CORBWA) Project Synthesis Report, 2014: pp. 40. Available at: http://www.fao.org/docrep/019/i3743e/i3743e.pdf
[131] Ibid.

subsequently arises is how to ensure that these discrepancies do not incentivise upstream riparian countries from unilaterally implementing development schemes in and around the River Basin that would defeat the ends of Basin sustainability.

To ensure that the these incentives do not undermine cooperation over the River Basin it is important that OKACOM establishes an economic water accounting (EWA) mechanism to effectively measure the usage, value, costs and benefits of the River Basin to ensure that the demands on the basin do not undermine its biological and hydrological functioning, causing further environmental degradation and subsequent socio-economic losses. While Namibia and Botswana have already established national water accounting systems, an EWA for the entire basin system is yet to be fully implemented. In addition OKACOM has started to think about creating a benefit sharing mechanism, aimed at more effectively distributing the asymmetrical gains of the River Basin. OKACOM should also consider an integrated tourism plan for the system to ensure that the benefits of tourism are distributed to all three riparian countries. This could include an information-sharing platform for basin-wide tourism and wildlife experiences that would span across all three riparian states, making use of joint marketing plans; and encouraging partnerships with the private sector and community trusts.

Assessing the drivers of cooperation in the case of the Okavango River Basin

Along with the above recommendations it is important to analyse the cooperation over trans-boundary water courses when applied to the case of the Okavango River Basin, to assess which drivers have been most significant and where other drivers which are essential have been less prominent in this case study. This analysis will not only help to enhance and sustain cooperative efforts among Angola, Namibia and Botswana, but will also help to provide a practical account for

which drivers are most significant for other RBOs and shared water courses where cooperative efforts have yet to be established.

Development functionalism for cooperation over the Okavango River Basin

Regional development has played a significant role in fostering cooperation between Angola, Namibia and Botswana over the Okavango River Basin. The theory of development functionalism, as highlighted in the previous chapter, focuses on political cooperation between states with regional development initiatives acting as the main drive or regional cooperation[132]. OKACOM and its three signatory riparian states have recognised the importance of the Okavango River Basin as an important mechanism for the advancement of social and economic development in the region. As such Angola, Namibia and Botswana through OKACOM strive to ensure that the benefits of this ecosystem are effectively managed so that future benefits will not be eroded due to negligent and misaligned national development agendas.

Basin-wide development initiatives for cooperation

Poverty Alleviation

All three countries share an overarching policy objective to alleviate poverty and to ameliorate welfare and living conditions of their respective populations through economic growth[133]. Economic growth in essence would result in expected increases in future water demands[134]. To this extent, through the shared vision of regional development and poverty alleviation, Angola, Namibia and Botswana have to coordinate their national development agendas through cooperative and open relations in order to ensure that projected increased demands for water do not undermine the sustainable usage and ecological integrity of the basin.

[132] Stephan, H. & Hervey, A. F. 2008. 'New Regionalism in southern Africa: Functional Developmentalism and the South African Power Pool', *Politeia*. Vol. 27, no. 3, pp. 54-76.
[133] The Permanent Okavango River Basin Water Commission. 2011. 'Executive Summary', *Cubango-Okavango River Basin Transboundary Diagnostic Analysis.* Maun, OKACOM: pp. 104.
[134] Ibid.

Policies for agriculture and food security development

An important development objective for all three Okavango River Basin states is to increase agricultural production both for food security and for the creation of employment and jobs for their citizenry through the expansion of agricultural export industries[135]. These objectives will certainly form the drivers of decisions made on development options in the basin, as developments in the agricultural sector will necessarily require increased water abstraction from the basin, as identified by both Namibia and Angola[136].

Energy policy development

A key development initiative for the basin is the improvement of energy security which would entail increasing the amount of energy available and the reliability of its supply, which is of course another crucial facet for economic development[137]. Both Namibia and Botswana are included in the Southern African Power Pool (SAPP), which seeks to develop the regional grid and increase regional energy generation capacity. Through cooperation on development outside of basin-related issues, Namibia and Botswana have effectively deepened cooperation on other levels, in turn enhancing already-established cooperative efforts over the Okavango River Basin.

With a particular focus on renewable energy sources, given the negative relationship of energy generation from fossil fuels and climate change, development of energy security has also given rise to the identification of hydropower as a critical source of energy generation, specifically on the part of Angola. All of Angola's proposed hydropower energy projects, apart from Mucundi, are to be located in the Angolan portion of the Cubango-Okavango River Basin in the form of 'run-of-river schemes'[138].

To this extent, basin-wide development initiatives that involve abstraction from the basin and could affect the hydrological capacity and functioning of the basin require cooperative and collaborative

[135] Ibid.
[136] Ibid.
[137] Ibid.
[138] Ibid.

coordination between riparian states. Through discussions of development schemes, with open and transparent information provided to all OKACOM member states, and negotiations in which member states can abstain from agreement, cooperation is actively practiced, driven and enhanced as member states are given 60 days to respond to initiatives and voice their opinions, while keeping the welfare and ecological integrity of the basin at the forefront of all decisions made.

Regional development initiatives

Cooperation between riparian states over the Okavango River Basin is also driven to some extent by regional development schemes led by the Southern African Development Community (SADC). There are numerous examples of regional development initiatives, led by SADC member states, which have culminated in a higher degree of regional cooperation. These initiatives include cooperative efforts to combat drought and increase food supply; infrastructural development and coordination for regional telecommunications, tourism, postal services and transportation; the establishment of transport corridors and related Spatial Development Initiatives (SDIs); cooperation with regard to regional peace and security initiatives; and most significantly for this dissertation, regional environmental security development in the form of joint water management[139].

SADC recognises the importance of water as a significant contributor to socio-economic development in the region. As such it promotes cooperation among member states through "coordinated, sustainable and integrated development and management" of the region's shared water courses[140]. Joint management of shared water sources is essential to SADC's development aims, which include lowering poverty levels; enhancing food and energy security; and advancing industrial development, in addition to its aims to promote peace and cooperation among signatory states[141]. In order to achieve these development goals through the Southern African water sector, the SADC secretariat has established a set of Regional Strategic Action Plans (RSAP) along with a

[139] Stephan, H. & Bridgeman, M. 2012. 'Regionalism and the Water Sector in Southern Africa', *The Scramble for Africa in the 21st Century: From the Old World to the New*. Cape Town: Renaissance Press, pp. 345.
[140] Southern African Development Community, 2007. 'Water for regional growth, integration , poverty reduction and peace', Regional Water Strategy. Gaborone, SADC: pp. 1.
[141] Ibid.

Protocol on Shared Water Courses (PSWS) which both emphasize the importance of cooperation over Southern Africa's vast network of trans-boundary water courses for the attainment regional development goals.

SADC's Regional Strategic Action Plans

At present there have been three rounds of Regional Strategic Action Plans (RSAP) on Integrated Water Resources Development and Management. From 1999 to 2004, the first round, RSAP I was implemented and sought to produce an "enabling environment for the joint management of regional water resources"[142]. In addition it strove to establish an institutional foundation for the implementation of infrastructure projects and other development initiatives. In its entirety RSAP I supported the implementation of 31 projects which fall under the following categories: legal and regulatory framework, integrated basin-wide approach, macro-policies, knowledge management, public awareness, stakeholder participation, and infrastructure investment[143]. SADC's RSAP has been praised as the "most advanced and comprehensive multi-country freshwater programme in the world"[144]. There were however certain recommendations to improve upon RSAP I's objectives. These included the transformation of RSAP from a project approach to a "programme approach"; and shifting its focus away from creating an "enabling environment", towards the advancement and development of water infrastructure[145].

With an emphasis geared towards infrastructural development, RSAP II was created to incorporate four strategic areas between 2004 and 2010, namely: effective planning, development and management of water resources; support for infrastructure development; water governance and capacity building[146]. Upon its evaluation, RSAP II received positive reviews as it had made significant progress particularly with regards to achieving overall strategic objectives and implementing

[142] Southern African Development Community, 2011. *Regional Strategic Action Plan*, pp. 9.
[143] Ibid.
[144] Ibid.
[145] Ibid.
[146] Ibid.

regional water projects. Moving forward, there were suggestions that RSAP should focus more intently on up-and-coming issues, including climate change adaptation; ecosystem-oriented and a human rights base approaches to water within the paradigm of infrastructural development[147].

At present, RSAP III is in its fourth year of implementation and is expected to end in 2015 alongside the 2015 Millennium Development Goals deadline. RSAP's overarching aim is to establish an "effective and dependable" framework with which to reduce poverty, stimulate regional integration, sustain peace and security in the region, and foster socio-economic development[148]. RSAP's third implementation phase acknowledges the importance of water resource development and effective management, solely intent on improving the lives of millions of people in the SADC region. The primary means through which RSAP seeks to achieve this is through good governance of Southern Africa's watercourses, as well as enhancing and developing regional water infrastructure.[149]. SADC's renewed vision for the region's water through RSAP III is to obtain "an equitable and sustainable utilisation of water for social and environmental justice, regional integration and economic benefit for present and future generation"[150]. As highlighted by Turton, Ashton and Cloete, the large number of trans-boundary water courses found in the SADC region are significant cornerstones of functional integration and development within the region[151].

SADC's regional water strategies for development which foster cooperation are also reinforced through continental water development initiatives including the African Ministers Council on Water (ANCOW) established by the African Union (AU), which seeks to encourage cooperation, security, socio-economic development and poverty eradication among member states, of which Angola, Namibia and Botswana are member states; as well as the Southern African Vision for Water Life and the Environment, which share similar goals to SADC's RSAP.

[147] Ibid., 11.
[148] Ibid., 12.
[149] Caholo, J .S. 2011. 'Preface', *Regional Strategic Action Plan on Integrated Water Resources.* SADC, pp. v.
[150] Southern African Development Community, 2011. *Regional Strategic Action Plan*, pp.12.
[151] Turton, A., Ashton, P. & Cloete, E. 2003. 'An introduction to the hydro-political drivers in the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 14.

Limits of development functionalism for cooperation

It must be acknowledged that there are however limits to the extent to which basin-wide and regional development initiatives are drivers for cooperation among riparian states over the Okavango River Basin. Cooperation through development can be seen as somewhat inconsistent when viewed through current national development frameworks[152]. The threat of a loss of biodiversity in the river basin as a trade-off for social and economic development stands as a bulwark in river basin negotiations between member states for development initiatives and could even potentially undermine cooperative efforts, should the preservation of the river basin reap more gains for certain riparian users as opposed to others. This is perhaps the greatest challenge that OKACOM faces today with the political and economic landscapes of all three riparian states having changed substantially since the inception of OKACOM in 1994.

To this extent development initiatives in the basin should strive to share the benefits among member states in order to ensure that cooperation is sustained. This could begin with Botswana's tourism industry with basin-wide tourism and wildlife developments that would certainly distribute the impressive gains of Botswana's Okavango Delta to both Angola and Namibia. Such a benefit-sharing mechanism would enhance cooperation and ensure that upstream riparian states do not develop without the consent of downstream users.

Neo-liberal institutionalism

Given the limits of development functionalism and the sensitivity of the Okavango River Basin, a more significant driver of cooperative efforts in this specific example can be attributed to the strong institutional frameworks which govern the management of the basin. Perhaps one of the most important drivers for cooperation which has been of monumental importance in sustaining

[152] The Permanent Okavango River Basin Water Commission. 2011. 'Executive Summary', *Cubango-Okavango River Basin Transboundary Diagnostic Analysis.* Maun, OKACOM: pp. 104.

cooperation over the Okavango River Basin, has been the presence of strong legal and institutional frameworks both at a basin-wide level, regionally and internationally.

OKACOM: its origins, policies & aspirations

In an attempt to foster regional cooperation and manage the individual national interests of each riparian state, the Permanent Okavango River Basin Water Commission (OKACOM) was established in 1994 as a "cooperation, coordination and information-sharing platform" with which to inspire an integrated response to the management of the Basin's water resources as well as to diminish and eradicate unsustainable national activities of Angola, Namibia and Botswana which threaten the Basin's hydrological balance[153]. Continued and strengthened cooperation is imperative in order to ensure that the upper limits of sustainable abstraction are recognized and respected, so that the speed and scale of national development activities do not surpass the capacity restraints of the system.

Origins of OKACOM

After Namibia gained independence in 1990, its newly established government created a number of water regimes with other riparian states in order to formulate a dialogue between riparian states around issues of sustainable development, mutually beneficial utilisation, integrated water resource management (IWRM) and conservation of shared water sources[154]. In September 1990 Namibia and the People's Republic of Angola renewed their already established river basin agreements on the Cunene River as well as re-establishing the Permanent Joint Technical Commission (PJTC). In November this was followed by the formation of the Joint Permanent Technical Commission (JPTC) between Botswana and Namibia in order to effectively manage shared water resource governance

[153] Chevallier, R. & Bybee, M. 2014. 'Maintaining the Ecological Integrity of Botswana's Okavango Delta', *SAIIA Diplomatic Pouch*. Available at: http://www.saiia.org.za/opinion-analysis/maintaining-the-ecological-integrity-of-botswanas-okavango-delta . Date accessed: 9th October 2014.

[154] Pinheiro, I., Gabaake, G. & Heyns, P. 2003. 'Cooperation in the Okavango River Basin: The OKACOM Persepctive', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 114.

over the Okavango River Basin[155]. At this stage the PJTC and the JPTC were bilateral agreements in which all three riparian states were represented. Long before Namibia gained its sovereignty through independence, its desire to increase water supplies to central Namibia, where water demand was highest, was noted by Angola and Botswana however issues of water usage and abstraction could not be addressed as Namibia was not a sovereign state at the time. However, in 1991, one year after Namibia's independence, Namibia proposed that the PJTC and the JPTC join forces at a combined meeting held in Windhoek on the 1st July 1991, with the intent to discuss the future prospects of the Okavango River Basin, particularly with regards to potentially establishing a tripartite river basin commission. Ultimately this collaboration led to the formation of the Permanent Okavango River Basin Water Commission (OKACOM) on the 15th of September 1994.

OKACOM's functions and policies

By entering into the 1994 OKACOM Agreement, Angola, Namibia and Botswana commit themselves to "promoting coordinated and environmentally sustainable regional water resources development, while addressing social and economic needs of the riparian states"[156]. One of the main objectives of OKACOM is to advise member states on matters relating to the effective cooperative management of the River Basin. These issues include the sustainable long-term yield of the basin, reasonable demand for water abstraction, conservation issues and standards, advancement of water resources, and the avoidance of pollution, to name but a few[157]. In essence, OKACOM strives to reduce and avoid "unintended, unacceptable and unnecessary impacts" that could arise from uncoordinated water resource development[158].

So as to inform these cooperative management decisions over the Basin, OKACOM employs a variety of scientific tools for basin-wide planning, including the Transboundary Diagnostic Analysis (TDA),

[155] Ibid., 115.
[156] The Permanent Okavango River Basin Water Commission. 2011. 'Executive Summary', *Cubango-Okavango River Basin Transboundary Diagnostic Analysis.* Maun, OKACOM: pp. 19.
[157] Ibid.
[158] Ibid.

along with its Integrated Flow Assessment (IFA) and the Environmental Protection and Sustainable Management of the Okavango River Basin (EPSMO) project. Together the TDA, IFA and EPSMO projects are essential for OKACOM's Strategic Actions Programme (SAP), which is a collaborative approach highlighting the principles and strategic direction for the development of the River Basin to be implemented over the next twenty years. OKACOM's SAP strives to prevent and avoid the degradation and loss of important ecosystem services and wetland functioning by restricting unregulated upstream developments and managing unsustainable changes in land and water use. The SAPs are essential for informing the individual National Action Plans (NAPs) of Botswana, Angola and Namibia, which outlines the specific time-bound interventions of each riparian country in response to priorities set out in the SAP principles. Reviewed every five years, SAP's scientific toolkit and policies help OKACOM to assess challenges and threats to the Basin, focusing on the relationship between current and future water use and hydrological flow, and identifying thresholds and the scope of acceptable development space. The convergence of specialists, consultants and mechanisms was regarded as one of the first initiatives in Southern Africa where riparian states and consultants came together to work towards a common objective and was seen as a significant achievement for integrated water resource management in the region[159]. As an effective information-sharing and policy coordination platform, OKACOM certainly fosters cooperation as the shared data helps in the de-securitisation of riparian states[160].

OKACOM' s objectives are guided by three broad principles. Firstly, that the sovereignty of each riparian state is inherent and should be respected; secondly, that national obligations of water utilisation from the river basin should not be to the detriment or inflict significant harm upon

[159] Pinheiro, I., Gabaake, G. & Heyns, P. 2003. 'Cooperation in the Okavango River Basin: The OKACOM Persepctive', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 116.
[160] Turton, A., Ashton, P. & Cloete, E. 2003. 'An introduction into the hydro-political drivers of the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria pp. 22.

another riparian state; and finally that water use of all three riparian states must be "equitable and reasonable"[161].

Future aspirations of OKACOM

After achieving twenty years of sustained cooperation, OKACOM is seeking to enhance cooperation through a number of future objectives. Firstly, OKACOM has expressed desires to become more autonomous and less reliant on donor funding. Secondly, and perhaps most importantly, OKACOM is looking into the creation of a financial-sharing mechanism to distribute river basin gains more effectively and equitably among the three riparian states[162]. This an important objective for OKACOM to achieve, as from the previous chapter, it is clear that equitable divisions of benefits gained from shared water courses is a significant incentive for the sustainability of cooperative relations between sovereign riparian states. In light of expansive national development agendas which seek to advance social and economic development, and in conjunction with external pressures like regional climate variability and population growth, establishing a financial-sharing mechanism can be seen as a crucial element for sustaining future cooperation between riparian states.

Overall it can be said that the example of OKACOM provides an optimistic outlook for successful and sustained cooperation over trans-boundary water sources. This reinforces the emerging consensus within the scholarship on trans-boundary water resource management, that trans-boundary water courses can be a catalyst for cooperation as opposed to inter-state tensions and even conflict, as has been previously hypothesized. The case of OKACOM in the Okavango River Basin and its twenty years of sustained cooperation highlights that institutions play a pivotal role in cooperative relations between states and the harmonisation of national policies as they act as information sharing and policy coordination bodies.

[161] Ibid.
[162] Interview with Dr Eben Chonguica, the executive secretary of OKACOM in Maun, Botswana on the 5th September 2014.

Political will for cooperation over the Okavango River Basin

In addition the establishment of OKACOM as a RBO has fostered high levels of mutual trust between riparian countries, which has certainly been a key factor in continued cooperative relations. Although an abstract concept, interviews with major stakeholders in OKACOM suggested that OKACOM's milestone of twenty years would not have been possible without significant levels of trust between Angola, Botswana and Namibia[163]. Developing on the concept of trust is that of political will. In the case of the Nile River Basin, where overarching cooperation has yet to be achieved, tensions have arisen between some of the ten riparian states. It would seem that the main reason for a lack of cooperation stems from these states' unwillingness to relinquish some degree of their sovereignty for cooperation and coordination over this trans-boundary water system.

Regional institutions for cooperation over the Okavango River Basin

Externally OKACOM's ambition to foster cooperation is further reinforced on a regional level by the Southern African Development Community (SADC) and their Protocol on Shared Water Courses (PSWS) which was ratified in 1995 by all fourteen SADC member states. SADC's PSWS has created a vital institutional framework which enables "co-ordinated cooperation in the management and utilisation of shared watercourses and to advance the SADC agenda of regional integration and poverty alleviation"[164]. In addition, the PSWS has also identified several important principles to be adhered to by member states. These principles include:

> "…respect for the sovereignty of member states in their respective usage of shared water bodies; compliance to rules of general or customary international law, community of interest, and equitable utilisation; the need to ensure the balance between economic development and environmental protection in trans-boundary water sources; cooperation in projects and studies relevant to shared watercourse systems; commitment to sharing and proliferating data among riparian states; the equitable and reasonable usage of shared watercourse systems; the requirement for discharge and

[163] Interview conducted with the Dr Eben Chonguica, the executive secretary of OKACOM on the 5th of October 2014.

[164] Southern African Development Community. 2011. *Protocol on Shared Watercourse Systems (PSWS).* SADC: pp. 6

abstraction permits for all watercourse users; and the obligation to inform all riparian states in the case of water-related emergencies"[165].

SADC's regional intuitional framework for cooperation over trans-boundary water systems, while signed after the establishment of OKACOM has significantly helped to institutionalise and reinforce the necessity of the norm of cooperation, particularly within Southern Africa which houses the largest number of water stressed countries in the world.

International and continental institutions for cooperation over the Okavango River Basin

In addition to OKACOM's strong institutional framework, which is supported regionally by SADC's PSWS, cooperation over the Okavango River Basin is also fostered through international institutions frameworks. These include 1997 UN Convention on the law of Non-Navigational Uses of International Watercourses, which serves as the only universal water treaty which provides guiding principles for governance over shared water courses over political boundaries, and includes the "equitable and reasonable utilization of international watercourses; the application of appropriate measures to prevent harm to other states sharing an international watercourses; and the principle of prior notification for planned measures"[166]. This international water treaty, although not legally binding has helped to inform regional and basin-level shared water management strategies and has reinforced and supported cooperation over the Okavango River Basin, as all three member states are UN signatories.

Norms of water cooperation

In addition to the strong regional regulatory framework provided by SADC, international conventions and norms that focus specifically on water cooperation have also been established which reinforce the importance of cooperation and harmonisation of national water management policies and provide further motivations for sustained cooperation. These international conventions are

[165] Ibid.
[166] United Nations Department of Environmental and Social Affairs (UDESA). 2014. 'Tranboundary Waters', *International Decade for Action: 'Water for Life: 2005-2015.* Available at: http://www.un.org/waterforlifedecade/transboundary_waters.shtml. Date accessed: 15th September 2014.

extensive but the most notable include the United Nations Convention on Water, which declared 2013 as the 'International Year of Water Cooperation'; as well as the UN's International Decade for Action 'Water for Life' project which began in 2005 and is set to end in 2015; along with World Water Day in 2009 which focused specifically on cooperation over shared water courses. These norms and conventions at an international level and through the advocacy of global leaders like Kofi Annan and Mikhail Gorbachev, have affirmed the importance of cooperation and its relevance in light of the global water crisis, subsequently supporting and enhancing cooperative efforts over river basins such as the Okavango River Basin.

Along with these norms for cooperation over shared water courses, there also exist important environmental conventions which stress the importance of cooperation in the pursuit of broader sustainable environmental and conservation goals, which have served as important tools for cooperation over the Okavango River Basin. These include the Ramsar Convention on Wetlands of International Importance, which strives to promote global awareness and cooperative efforts through the conservation of threatened wetland ecosystems, especially where these ecosystems support unusually large number of unique species or an unusually wide diversity of species[167]. In 1996 the Okavango Delta was declared a Ramsar site. While this declaration is of specific relevance to the national conservation and water policies in Botswana, the specific requirements of the Ramsar convention necessitate that other riparian states become involved in conservation and wise use of the designated site[168]. Whilst Namibia has become a signatory to the convention,

[167] Ashton, P. & Neal, M. 2003. 'An overview of strategic issues in the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 41.

[168] Ramsar. 1971. *Convention on wetlands of international importance especially as waterfowl habitat*. United Nations Educational, Scientific and Cultural Organisation (UNESCO). Available at <www.ramsar.org>.

contributing 3% of water that flows in the Okavango Delta, Angola which contributes 94% of river inflows has yet to do so[169].

In addition to the Ramsar Convention on Wetlands of International Importance, Botswana, Namibia and Angola have all ratified the UN Convention on Biological Diversity (UNCBD). This important convention, whilst preserving the importance of each state's sovereign right to exploit their natural resources in relation with national environmental policies, emphasizes states' responsibility to ensure that national activities do not cause environmental damage beyond political boundaries[170]. This convention commits signatories to cooperate with other member riparian states directly, or through international organisations on issues that extend beyond political borders and on issues of shared interest including the conservation and sustainable use of important biodiversity[171]. It also advises the use of environmental impact assessments in order to ensure that development initiatives will not have adverse effects on biodiversity[172]. This convention can certainly be argued as having a significant effect on cooperation over the Okavango River Basin, as OKACOM has worked hard to establish environmental impact assessment mechanisms through EPSMO and the TDA to inform decisions undertaken and thereby facilitating cooperation through increased awareness and information sharing.

The final environmental convention that has reinforced the norm of water cooperation specifically over the Okavango River Basin is that of the UN Framework Convention on Climate Change (UNFCCC) ratified by all three riparian states. The primary objective of this convention is not directly related to water consumption or cooperation, however, it plays a significant role in states where water scarcity is a major concern. The UNFCCC incentivizes member states to cooperate in order to promote a supportive and open international economic system that seeks to advance sustainable

[169] Ashton, P. & Neal, M. 2003. 'An overview of strategic issues in the Okavango River Basin', *Transboundary rivers, sovereignty and development: Hydro-political drivers in the Okavango River Basin.* African Waters Issue Research Unit, Pretoria: pp. 43.

[170] UNCBD. 1992. *Convention on biological diversity*. United Nations Conference on Environment and Development (UNCED). Rio de Janeiro, Brazil. Available at <www.biodiv.org>.

[171] Ibid.

[172] Ibid.

economic growth and development for all countries, particularly developing countries. It also strives to encourage sustainable management of water resources through cooperative efforts for conservation of important global ecosystems. Finally, this convention emphasizes the importance of integrating climate change adaptation and mitigation strategies within joint water resource management[173].

Coupled with a strong presence of regional and international legal frameworks for international cooperation over trans-boundary water sources, is the increasing emphasis on the norms of international cooperation that are becoming increasingly interwoven with the attainment of the 2015 Millennium Development Goals which have the wise use of water and development for water sanitation and basic needs at the centre of a number of its goals.

The wide range of international norms and conventions that promote water cooperation, of which Botswana, Angola and Namibia are all member states, can be seen as an important driver of cooperation and has certainly helped to support cooperative efforts between these riparian states over the Okavango River Basin.

Drawing Conclusions

After an analysis of all drivers of cooperation it is perhaps most obvious that the institutionalisation of water cooperation over the Okavango River Basin through OKACOM, with support from regional and international institutional frameworks for water cooperation, has been the most prominent driver of cooperation in this case study. This is on the basis that these institutions act as information-sharing platforms in which coordinated policies can be created, in turn establishing political trust between riparian states and enhancing cooperative relations over the basin. While benefit-sharing mechanisms (through basin-wide tourism initiatives for example) have yet to be established, which would further reinforce cooperation among riparian states over the Okavango River Basin,

[173] UNFCCC. 1992. *United Nations framework convention on climate change*. United Nations Conference on Environment and Development (UNCED). Rio de Janeiro, Brazil. Available at <www.unfcc.int/resource/conv/index.html>.

OKACOM's twenty years of cooperation has highlighted the importance of institutions and institutional frameworks as drivers of cooperation.

The second most important driver of cooperation in the case of the Okavango River Basin is that of international norms and conventions, to which Angola, Namibia and Botswana are all signatories. These norms and conventions have either directly or indirectly emphasized the importance of water cooperation for the attainment of a number of other global development and environmental goals and in turn have provided a positive reinforcement for cooperation over the Okavango River Basin.

Finally, regional and basin-wide development initiatives can be seen as the third driver of cooperation in the Okavango Delta. Through development initiatives that directly or indirectly pertain to the river basin, cooperative relations are fostered and enhanced. However, development functionalism as a driver for cooperation in this specific case is limited in that there has been national development policies have not been fully integrated and coordinated, especially as the ecological sensitivity of the basin stands as a strong bulwark for many development initiatives.

5. Conclusion

This dissertation has sought to highlight the drivers of cooperation in the case of the Okavango River Basin between its three riparian states: Angola, Namibia and Botswana. Through an exploration of concepts and themes this dissertation has reinforced the now conventional wisdom that trans-boundary water courses are perhaps more a catalyst for cooperation as opposed to conflict. In addition this dissertation, in outlining the hydro-political context of Southern Africa, sought to underscore the importance of trans-boundary water cooperation in the region especially as pressures from climate variability and population growth, resulting in increased demand for food, water and energy, become increasingly pressing issues. This informed the reason for seeking to analyse the drivers of cooperation in the case of the Okavango River Basin.

In gaining a general understanding of theories surrounding cooperation over shared water courses in general, this dissertation highlighted three main drivers of cooperation: namely regional development functionalism; neoliberal institutionalism; and norms and conventions within a constructivist approach. Through an application of these drivers of cooperation to the case of cooperative efforts between riparian states over the basin, it was found that the most significant driver of cooperation is the institutionalisation of cooperation found in water regimes and RBOs, like OKACOM, and at a regional and international level through SADC's PSWS and the UN Convention on the law of Non-Navigational Uses of International Watercourses. Institutions like OKACOM are especially important as they act as information-sharing platforms which enable political trust to develop between member states, in turn facilitating the harmonisation of national policies and enhancing cooperative relations.

Closely following the institutionalisation of water cooperation, are the increasingly prominent norms and conventions that directly and indirectly encourage water cooperation over trans-boundary waters and have been specifically influential in the case of the Okavango River Basin.

Finally, this dissertation noted the importance of regional development integration, which while slightly limited in its influence, still remains an important driver of cooperation, as states seek to develop both at a social and economic level, and given the dominance of shared resources in the region, further reinforces cooperative relations between riparian states of the Okavango River Basin.

In light of the pressing challenges of water scarcity that have arisen with pressures from climate change and population growth, it is important when moving forward to acknowledge these important drivers of cooperation in order to create cooperative efforts over trans-boundary waters where they have yet to be established, as well as to further enhance already-established cooperative international water relations. In the case of the Okavango River Basin, in order to ensure that cooperation is sustained, OKACOM should consider the following recommendations, as previously highlighted in this dissertation:

- OKACOM should incorporate a cross-sectoral approach in the management of the Okavango River Basin, integrating land-use planning and other national sectors (e.g. mining) and engaging with all relevant stakeholders at a local, national and regional level.
- In addition OKACOM should consider a 'Payment for Ecosystem Service' and/or a financial benefit-sharing mechanism to offer incentives to upstream countries to refrain from implementing potentially destructive developments. This could include a regional tourism and wildlife plan for the basin.
- EWA mechanisms should also be implemented to account for the abstractions, costs and benefits of water use in the basin and to ensure that abstractions do not compromise the hydrological and biological functioning of the system.

- Finally, with the increase in water variability forecast by climate change scenarios, OKACOM should strive to integrate climate adaptation policies into its basin-wide strategy to ensure that hydrological balance of the river basin is not disturbed.

While there may be room for improvement to enhance cooperation over the Okavango River Basin, this case study of cooperation and joint management of a trans-boundary water course, provides an optimistic account of cooperative efforts that can be established over shared water courses. OKACOM provides a good model for cooperation and should be commended as a noteworthy example highlighting the importance of cooperation and the harmonisation of policies and the now conventional wisdom that trans-boundary water courses are indeed catalysts for international cooperation.

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