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**PREVENTING CONFLICT IN AFRICA THROUGH EFFECTIVE WATER
MANAGEMENT IN THE SADC REGION**

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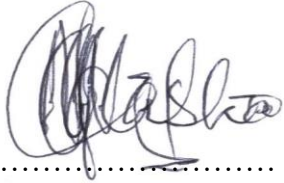
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DECLARATION

I, Mompoloki Marks Nkgapha hereby declared that this Research thesis is my original work and has not been submitted for Examination in this university or any other university.



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ABSTRACT

Preventing the outbreak of destructive conflict remains one of the most difficult challenges in the 21st Century. In the case of this study, water conflicts are seen as being inevitable if nothing is done to prevent them from occurring. Competition for the available water resources will continue to increase to a point where new and perhaps radically different interventions are needed.

In the SADC region, the most shared of natural resources is that of water and which occurs with varying abundance or scarcity at different times of the year in different parts of the region. The objectives of the study are: To identify challenges faced by states over transboundary water shared resources with a focus on SADC. To assess the effectiveness of policies or agreements in preventing conflicts over shared water resources with a focus on SADC. To recommend ways of enhancing prevention of conflicts over shared water resources with a focus on SADC. The data collection methods involved secondary data obtained from the published and unpublished books and project reports, magazines, and journals on conflict prevention, water management, water resources, physical and hydrological aspects of the selected shared rivers, agreements now in operation and institutions established for selected international river basins, water resources developments as well as sectoral water use. This study has concluded that unlike domestic conflicts over water quantity and quality, which are generally accessible to resolution by a higher-level state authority or by informal means, i.e. by the users themselves, one particular feature of transboundary water-use conflicts is that they can be resolved only through negotiations between sovereign states. Despite limited number of formal coordination forums, transboundary water management has made considerable progress, especially in Southern Africa: New organizations have been founded, older organizations restructured and leaned own, and some such organizations have enlarged their regulatory scopes and fields of responsibility and redefined their functions. The reasons for this must be sought in the overall political constellation given at present, with the Republic of South Africa, the dominant regional power, pursuing a cooperative and pro-integration course. Furthermore, the Southern African Development Community (SADC) provides an overarching political framework conducive to such efforts aimed at transboundary cooperation. Another important success factor must be seen in the instrumentalist, pragmatic approach that has been pursued in the development of trans boundary water organizations; two features typical of the approach are confidence-building measures and the procedures governing of intergovernmental cooperation that have now been established.

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ACRONYMS

DC	Development Cooperation
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross domestic product
GEF	Global Environment Facility
GIS	Geographic information system
HWRP	Hydrology and Water Resources Programme
ICWC	Interstate Coordination Water Commission of Central Asia
LHDA	Lesotho Highlands Development Authority
LHWC	Lesotho Highlands Water Commission
LHWP	Lesotho Highlands Water Project
LHWRF	Lesotho Highlands Water Revenue Fund
LIMCOM	Limpopo Watercourse Commission
SADC	Southern African Development Community
SADCC	Southern African Development Coordination Conference
SADC-HYCOS	SADC Hydrological Cycle Observing System
SADC-IS	SADC Directorate Infrastructure and Services
SADC-WD	SADC Water Division
SADC-WSCU	SADC Water Sector Co-ordination Unit
SADC-WSRG	SADC Water Strategy Research Group
ZACPLAN	Action Plan for the Environmentally Sound Management of the Common Zambezi River System
ZACPRO	Zambezi Action Plan Project
ZAMCOM	Zambezi Watercourse Commission
ZRA	Zambezi River Authority
ZRBA	Zambezi River Basin Authority

CHAPTER ONE: INTRODUCTION

1.1 Background

Water is arguably one of the world's most important finite resources with no known substitutes for most of its uses. "Worldwide, agriculture accounts for 70 % of all water consumption, compared to 20% for industry and 10% for domestic use".¹ "However, in industrialized nations, industries consume more than half of the water available for human use".² Further, "it must be noted that agricultural use of water is mainly for irrigation of crops and farmers who have livestock must provide clean water for their livestock". The above figures clearly indicates that there is often a competition for water use between different sectors of the economy which can often lead to conflict between the users if not managed properly. For instance, within states, "water dependent sectors such as irrigated agriculture can no longer sustain farming livelihoods resulting in destabilizing migration flows thereby leading to conflicts among users".

It therefore becomes imperative that conflict prevention becomes key in addressing water conflicts and it can be a productive pathway to confidence building and cooperation among such different water users. "Cooperative incidents outnumbered conflicts by more than two to one from 1945 to 1999".³ "The key variable here is not absolute water scarcity but rather the resilience of the institutions or organizations that manage water and its associated tensions".⁴ In some other cases, water does provide one of the few paths for dialogue either through signing of agreements in otherwise heated bilateral conflicts. Further, "in politically unsettled regions, water is often essential to regional development negotiations that at times serve as a mitigating strategy against conflicts".⁵

¹Global water consumption statistics, www.worldometers.info/water. Assessed on 12 October 2017.

²Ibid.

³Wolf, Aaron T., Shira B. Yoffe, & Marc Giordano. "International waters: Identifying basins at risk" In Water Policy 5, pp 29 -60.

⁴Ibid

⁵Ibid

Transboundary cooperation around water therefore motivates countries to pursue negotiations in order to avert any conflicts that might arise from sharing such resources. This opens a water peacemaking strategy that creates regional identities and institutionalize cooperation on a broader range of issues. For example, “this include the institutionalized environmental cooperation around the Baltic Sea during the Cold war (Helsinki Commission) and the current cooperation in post – apartheid Southern Africa through the Southern African Development Community” (SADC).⁶

The above scenario is clearly corroborated by the 2013 UN Water Analytical Brief on “Water Security and the Global Water Agenda”, “water is in itself a security risk thereby acknowledging water insecurity could act as a preventative measure for regional conflicts and tensions”. The report further said “that water security could contribute to achieving increased regional peace and security in the long term as is clearly indicative of arrangements put in place by the SADC region”.⁷

The term transboundary refers to waters that are shared among multiple groups or countries with different needs and interests. It is also worth noting that in an era of increasing water stress it would call countries to manage these very limited resource which is crucial in in promoting peaceful cooperation and sustainable development. Further, “depleted and degraded transboundary water resources have the potential to cause social unrest and tensions within and between countries sharing such water resources”. Depletion of water resources is further exacerbated by the “impact of the climate change combined with the demands of increasing populations and economic growth which put a lot of pressure on limited water resources to meet

⁶Conca, Ken & Geoffrey D. Dabelko (Eds). Environmental peacemaking. Washington, D.C. and Baltimore: The Woodrow Wilson Center Press and John Hopkins University Press, 2002.

⁷ UN Water Analytical Brief – “Water Security and the Global Water Agenda. http://www.unwater.org/downloads/analytical_brief_oct_2013_web.pdf. Assessed on 14 October 2017.

the demands hence it requires a supranational and integrated approach to transboundary water resource management which can pave the way forward for countries to cooperate and share such resources in an equitable manner”. Transboundary water management creates benefits for everyone to share. For instance, “there is a likelihood of benefits in terms of international trade, climate change adaptation, economic growth, food security, improved governance and regional integration among participating countries”.⁸

One of the greatest challenges of managing water is that it is a resource that has no respect for political boundaries as it originates from one country and crosses into other countries rendering all the countries concerned not to lay claim to such waters. When water crosses national borders, the resource creates interdependencies between nations which have the potential to foster cooperation or exacerbate conflict. There are a total of 263 transboundary lake and river basins cover almost half the Earth’s surface. “145 States have territory in these basins, and 30 countries lie entirely within them”. “There are approximately 300 transboundary aquifers, helping to serve the 2 billion people who depend on groundwater”. “Cooperation is essential, especially in areas vulnerable to the impacts of climate change and where water is already scarce”.⁹

Global trans-boundary river basins total up to 276 with sixty in Asia, thirty eight in South America, sixty eight in Europe, sixty in Africa and forty six North America.¹⁰ However, 60% of world’s universal river basins do not have a cooperative administration. In the SADC region, neither large rivers nor basins are not normally confined to one country to which they belong such that these rivers flow from one country to the other and as such are referred to as transboundary.

⁸ Ibid.

⁹Transboundary Waters | UN – Water. www.unwater.org/water-facts/transboundary-water/. Assessed on 16 October 2017.

¹⁰ A.C. Vas, & A.L. Pereira, ‘In Towards Sustainable Peace: Reflections on Preventive Diplomacy in Africa. Edited by H. Solomon. Pretoria, 1998, pp. 112–24.

It has been logically assumed that the critical degree of water shortage can easily create a serious rift even between the friendly and peaceful neighbours. This is because water is among the few vital resources that recognize no political boundaries and therefore requires balancing competing interests of various stakeholders. Additionally, over the years increasing water scarcity has amplified water conflicts in various river basins.¹¹ Notable examples of serious water conflicts have been witnessed in the Nile river basin where four main developments needs concerning water use exist covering areas such as irrigation water and production of HEP energy, floods prevention, management of the watershed, reduction of the soil erosion, and water pollution prevention thereby exacerbating tensions or conflicts among the affected countries sharing the Nile waters.

Water “related violence often occurs on the local rather than at the international level and the intensity of such conflict is generally inversely related to geographic scale”.¹² The principles that guide the colonial agreements about water are rejected by countries sharing the Nile basin except Egypt. Egypt and Sudan are mostly interested in waters that do not have colonial agreements, the agreement which was signed in Cairo between the Republic of Sudan and the United Arab Republic.¹³ There is also the example of the ongoing Kenya-Somalia disagreement on the water resources which are found within the floor of the ocean. The hidden agenda in the disagreement is the wish to license the firms with a view of engaging in oil sale and benefiting from the revenue that comes from the oil. In the dispute Kenya wants the border of the water system to run along the latitude of the Indian Ocean while Somali want it to run along the coast.

¹¹A.K. Biswas, Management of International Water: Problems and Perspective. UNESCO, Paris. 2013, p 142.

¹² T. Wolf, Water and human security: The Global Environmental Change and Human Security Project. Victoria, Canada (June 1999). www.transboundarywaters.orst.edu/publications/.../Carius_Dabelko_Wolf%20Final.pdf. Assessed on 16 October 2017.

¹³Agreement between the United Arab Republic and the Republic of Sudan for the full utilization of the Nile waters, signed at Cairo, November 8, 1959 and Protocol concerning the establishment of Permanent Joint Technical Committee signed at Cairo, January 17, 1960. https://www.internationalwaterlaw.org/.../UAR_Sudan1959_and_Protocol1960.pdf. Assessed on 16 October 2017.

“Kenya has reasons to be worried because the Somali government announced that it had completed surveys of the relevant area and had planned to start issuing offshore oil and gas exploration licences by 2015”.¹⁴

Somalia subsequently carried its long-stewing maritime debate with Kenya which was sent to the (ICC) International Court of Justice in the Netherlands. Somalia initially conveyed some of disputes to the ICC on August 14, 2014, when they recorded an application with the global court with the aim of building up a solitary limit amongst Kenya and Somalia along the Indian Ocean restricting the local ocean as per the [United Nations Convention on the Law of the Sea ("UNCLOS")] and standard worldwide law." Somalia contends that the straight line acts in violation of UNCLOS Article 7 and that UNCLOS Article 15 rather requires the border between the regional oceans to be a middle line and the outskirts of the high-class financial zone and the mainland rack to be settled in the three-stage process laid out in Articles 74 and 83. The ICJ's treatment of the case will have imperative repercussions not just for Somalia and Kenya (and potentially neighboring Tanzania), but also for the energy organizations that are interested in exploiting the offshore resources of East Africa.¹⁵

On the other hand, there also exist examples on cooperation over the water that is utilized across the globe. For example, Bolivia and Peru created the Binational Autonomous Water Authority of Lake Titicaca to ensure cooperative sharing of Lake Titicaca in order to enable the two countries to work peacefully together on the administration of these water resources.¹⁶ Another case relates to the cooperative utilization of water from the Aral Sea which is a freshwater basin that

¹⁴Kenya and Somalia in bitter dispute over Indian Ocean Border: The East African News, 25 October 2014. www.theeastafrican.co.ke/News. Assessed on 17 October 2017.

¹⁵ T. Wolf, S.B. Yoffe, & M. Giordano, 'In Towards Sustainable Peace: Reflections on Preventive Diplomacy in Africa 39, 5, 2003, pp. 1109–25 2017.

¹⁶Lake Titicaca Basin (Bolivia, Peru). www.unesco.org/.../HQ/.../wwap_Lake%20Titicaca%20basin_Case%20studies1_EN.pdf. Assessed 17 October 2017.

is shared amongst six countries including Soviet Union Turkmenistan, Kyrgyzstan, Tajikistan, Kazakhstan, and Uzbekistan.¹⁷ The surface of the Aral Sea is reported to have shrank to 10% of its original size between the 1960s and 2007 which was mainly because of the diversion of water coming from two its source rivers. These events also led to serious devastation of the environment. This was however solved through the building of the Kok - Aral Dam that does not interfere with the discourse of the two rivers draining into the Aral Sea which has in turn began to fill again.¹⁸

The SADC portion of the African continent comprises of 15 river basins which are considered as the major ones.¹⁹ The 15 river basins are transboundary based on the fact that they are shared by two or more nations. The river basins start from the Congo basin which is 3, 800,000 km² through the Zambezi river basin which is 1,400,000 km² to Umbeluzi river basin which is 5,500 km². All the three river basins are shared by approximately two nations. The region has a water course system which has multifaceted water rights and as of now it has not experienced any conflicts over utilization of the shared resources.²⁰ However, the absence of any conflicts regarding sharing of water resources does not at all remove any occurrence of future conflicts between any two or more countries.

It therefore calls for concerted efforts between such countries to come up with ways of preventing conflicts before occurring. For instance, “the Okavango river basin is an excellent example of how to share regional benefits between three riparian states of Angola, Botswana and Namibia”. This was achieved through a coordination of efforts that was put in place “for the

¹⁷The Aral Sea Transboundary river basin- Food and Agriculture. www.fao.org/nr/water/aquastat/basins/aral/sea/aral.sea-CP_eng.pdf. Assessed on 17 October 2017.

¹⁸Ibid.

¹⁹E. Delbourg, and E. Strobl, Cooperation and feud between upstream and downstream states in African transboundary basin. Paris: Ecole Polytechnique, 2012.

²⁰ B.R. Davies, J.H. O'Keefe, & C.D. Snaddon, A Synthesis of the Ecological Functioning, Conservation and Management of South African River Ecosystems, WRC report no. TT 62/93. Pretoria: WRC, 1993.

management and use of the Okavango's waters that was established in 1994 resulting in the constitution of the Permanent Water Commission on the Okavango River Basin", "to act as a technical advisor to the Contracting Parties on matters relating to the conservation, development and utilization of water resources in the common interest to the Contracting Parties." ²¹

²¹Agreement between the Governments of the Republic of Angola, The Republic of Botswana and The Republic of Namibia on the Establishment of Permanent Okavango River Basin Water Commission (OKACOM) (OKACOM). [Extwprlegs1.fao.org/docs/pdf/mil17435.pdf](http://extwprlegs1.fao.org/docs/pdf/mil17435.pdf). Assessed on 18 October 2017.

1.2 Statement of the Research Problem.

Preventing the occurrence of conflict remains a major issue to tackle in the 21st century. The water scarcity which is rampant in some parts of the SADC region and other competing developmental requirements between member states may result in disputes and tensions over water. To this end, when conflicts occur, the amount of cost both in terms of financial and human loss and the physical damage involved often become everlasting and irreversible. Consequently it has been widely acknowledged that water conflicts will continue to occur if a tangible solution is not established. Therefore, competition for the accessible water assets will keep on increasing to a point where new and viable interventions by all contracting parties are put in place to have long lasting solutions in addressing issues of water management and equitable distribution of water resources.

In the SADC region, the most shared of natural resources is that of water which exists with various degrees of adequacy or shortage in different areas at particular times of the year. The water resources of these shared river basins play vital roles in the socio-economic growth of riparian nations and the integration of the SADC region. No one can argue that the disagreements over water resources has facilitated the occurrence of conflicts and thus presenting a good case for preventive diplomacy through water management.²² However, conflicts over water resources may occur in the upcoming years if collaboration on shared resources fails to be nurtured and further enhanced. Furthermore, the anticipated adverse effects of changes in global climate could raise the potential for conflict in the management of national and/or transboundary waters significantly.

In the SADC region, “water resource availability continues to be high on the national

²²G.A. Codd, J.S. Metcalf & K.A. Beattie, 'Retention of *Microcystis aeruginosa* and *microcystin* by salad lettuce after spray irrigation with water containing cyanobacteria', *Toxicon*, 37, 1999, pp. 1181–85;

security agenda of most of SADC member states”. “Instead of the growing conflict, the response has been increased cooperation with respect to shared water resources”. Further, “water resources have the potential to be developed in such a way as to contribute to the achievement of food security and poverty eradication objectives”. “Thus in the SADC Regional Water Policy the statement is made that “The goal of SADC – “the attainment of an integrated regional economy on the basis of balance, equity and mutual benefit for all Member States”, “with three key SADC objectives: poverty reduction, food security and industrial development can be achieved through development and management of the water resources of the SADC region”.²³ “Cooperation over shared water resources in the SADC region has historically been mostly on a bilateral basis and other solutions have also been made at a multilateral or regional level”. This has also been enhanced by the formation of shared watercourse institutions and more basin – wide agreements (i.e. agreements including all riparian states) being concluded to avert conflicts thereby using these watercourses as a path way to peacemaking. The SADC area has managed its water resources either through bilateral or multilateral arrangements thereby lending credence to its ability to prevent conflicts arising out of sharing its water resources. This study therefore seeks to use SADC region as a model for preventing conflicts in Africa through effective water management strategies and if this is emulated by other regions in Africa and world over then more conflicts regarding sharing of water resources could be resolved amicably.

²³SADC Regional Water Policy, August 2005. www.sadc.int/files/1913/5292/8376/Regional_Water_Policy.pdf. Assessed on 18 October 2017.

1.3 Objectives of the Study

The objectives of the study are:

1. To establish challenges faced by states that share water resources in the SADC region.
2. To assess the effectiveness of policies or agreements in preventing conflicts over shared water resources with a focus on SADC.
3. To recommend ways of enhancing prevention of conflicts over shared water resources with a focus on SADC.

1.4 Literature Review

This section discusses previous scholarly works in relation to conflicts, Concept of preventive diplomacy, water and conflict and finally water management as a conflict prevention strategy. Based on this literature, the study seeks to identify gaps that need to be addressed through this study.

1.4.1 Conflict

A conflict arises when two or more parties have incompatible goals about something.²⁴ Conflicts would be nearly solved if policy makers work on coming up with tangible resolution mechanisms that can bring long lasting solutions that are robust, harmonized and all Contracting Parties have the trust and mutual respect and have the believe that they can all share the benefits in an equitable manner that can be accepted by all.

Conflict will never disappear and cannot be ignored and all efforts must be geared towards addressing them as and when they occur. Conflicts bring an opportunity to re-examine relationships. Proper management of conflicts should remove its negative and harmful effects.

²⁴ Mwangiru M, (2000). *Conflicts in Africa: Theory, processes and institutions of management*, CCR publication.

Conflicts are therefore beneficial and should not always be viewed negatively.²⁵

They come with benefits to the society. Another school of thought argues that conflicts are caused by lack of fulfillment of needs.³ People are displeased because their expectations are not met as they perceive that their needs have been neglected. This negligence leads to frustrations as explained by the frustration-aggression theory and such frustrations can easily degenerate into violent conflicts. Some conflicts are not manifested until a trigger occurs like was seen in Kenya and Somalia border dispute. Such structural conflicts will always require structural changes to be put in place before the conflict escalate. This therefore calls countries to have conflict early warning and response mechanisms.

The above assertion can also be explained by Christopher Mitchell who posits that “change would thus frequently be associated with discontent and rivalry, leading to conflict and sometimes to violence”. “It might well be the case that this last one could be avoided if the change were to be gradual and well managed” (e.g. through arrangements made for redundant workers or newly landless peasants to find alternative roles and resources), but social “cushions” “seemed rare in the 1960s and with the sudden and extensive changes brought about through the globalization of market capitalism appear rarer today”. “It is noticeable, however, that even in the 1960s and 1970s analysts were linking change with conflict and arguing that conflict avoidance” (an early precursor of long term conflict prevention) “was a matter of managing change effectively”.²⁶

²⁵ibid.

²⁶Mitchell Christopher R: Conflict, Change and Conflict Resolution.

www.berghof-foundation.org/fileadmin/redaktion/.../mitchell_handbookII.pdf. Assessed on 18 October 2017.

1.4.2 Concept of Preventive Diplomacy

Preventive diplomacy refers “specifically to diplomatic action taken, at the earliest possible stage”, “to prevent disputes from arising between parties, to prevent existing disputes from escalating into conflicts and to limit the spread of the latter when they occur”²⁷ It therefore “seeks to resolve disputes before violence breaks out thereby enforcing peacemaking and peace-keeping which are required to halt conflicts and preserve peace once it is attained”. If successful, it can further “strengthen the opportunity for post conflict peace building which can be used to prevent the recurrence of violence among nations and its peoples”.

Given the “increasing drive towards cooperation and the establishment of agreements and Shared Watercourse Institutions it can be concluded that the conflict potential over shared resources in the SADC region” has been managed and seem not to escalate into fully fledged conflict because Member States respect one another and are so committed to upholding the agreements that they signed and all efforts are geared to negotiations between the Member States rather than engaging in open conflicts. The SADC region sees greater potential for regional integration that binds together all its Member States to tackle their problems as one entity as it gives the region the leverage to address their concerns as one thereby strengthening their long standing cordial relations either at a bilateral or multilateral levels.

The way the SADC region conducts its affairs paints a picture that is as a region that respects its agreements and fully committed to its cause as a regional body and has managed this through

²⁷UN Documents on Gathering a body of global agreements: An Agenda for Peace, Report of the Secretary – General pursuant to the Statement adopted by the Summit Meeting of the Security Council on 31 January 1992. www.un-documents.net/a47-277.htm. Assessed on 19 October 2017.

dialogue and cooperation to avert conflicts into long lasting peace that is obtaining in Southern Africa. The above stand if taken heed of by other regions one can safely say much can be achieved in resolving individual country's differences before they escalate into conflicts thereby reaping the benefits of dialogue and cooperation that can ensure peace and stability among countries is maintained for the good of a safe and secure environment for all nations and its peoples.

1.4.3 Water and Conflict

Where water is scarce, competition for limited supplies can lead to nations to see access to water as a matter of national security that its absence can threaten their very survival. History is replete with examples of competition and the associated conflicts that have arisen out of the demand for this limited resource. It then means that "water management of hydrological basins has been the source of low intensity conflicts especially when it is shared by more than one state". This is often due to varying water and energy management perspectives among the contending countries, as each every country has its own way of pursuing its national interests and regardless of the needs of the other countries. This therefore calls for countries to cooperate so as to reap us the benefits that is accruing from such shared water resources.

In the Southern Africa, there has been a growing trends of securitizing water resources in both at the political, social and environmental spheres as witnessed by the case in point of the Okavango and Incomati basin, and the Lesotho Highlands Water Project (LHWP). For instance, "the Lesotho Highlands Water Project which is a water supply project with a hydropower component was developed as a partnership project between the governments of Lesotho and South Africa". It is highly regarded as an African success flagship project that was pioneered the way for

peaceful cooperation and mutually beneficial socio – economic development across the African continent.

In the SADC region, water resource availability continues to be high on the national security agenda of most of SADC member states. “Instead of the growing conflict, the response has been increased cooperation with respect to shared water resources”. “Cooperation over shared water resources in the SADC region has historically been mostly on a bilateral basis and other solutions have also been made at a multilateral or regional level”. This has also been enhanced by the formation of shared watercourse institutions and more basin – wide agreements thereby averting conflicts by using these watercourses as a path way to peacemaking.

The SADC region has managed its water resources either through bilateral or multilateral arrangements thereby lending credence to its ability of preventing conflicts before they occur by ensuring that all contacting Member States have over the years stood by their commitments in order to ensure that there is peace and stability within the region thereby reinforcing the model adopted by SADC region of coming up with effective water management strategies that has over the years prevented the escalation of conflicts by resolving such in an amicable manner thus enjoying long lasting peace that is synonymous within the SADC region. Further, there is need for policymakers to be aware of potential conflicts that might arise over, or exacerbated by water issues and therefore a need for international bodies or countries to either mitigate or avoid some possible conflicts as a result of sharing the limited water resources.

1.4.4 Water Management

At the centre of any crisis there arises a question of how best to resolve the problem with the whole aim of arriving at a long lasting solution that can also be sustained by all concerned parties in order to avoid conflicts among such countries. Water management in the SADC region has

been and continues to central for the regional cooperation that has brought all Member States to respect one another in an effort to share water resources in an equitable and fair manner so that all Member States sharing such water resources are able to share the benefits of such a resource.

The above SADC stance was also buttressed by Kofi Annan when he said:

“But the water problems of our world need not be only a cause of tension; they can also be a catalyst for cooperation... If we work together, a secure and sustainable water future can be ours”

In light of the above, SADC Member States that share water resources has managed to aggressively engaged in a dialogue on how to cooperation among themselves in order to share such limited water resources in an equitable manner thus has proven to be a productive pathway to confidence building, cooperation and arguably implementing water sharing strategies that has over the years to some extent prevented water conflicts in the region. The collaboration within the SADC region can be adopted by other regions that has the same water sharing challenges that has seen such regions engulfed in more conflicts over such water resources with a view of coming up with such water management strategies that can enhance and sustain peace that can be enjoyed by all within and across borders for the livelihood of mankind.

1.5 Significance of the Study

The significance of the study is to identify the water management strategies adopted by the SADC region in sharing water resources and that has over the years prevented conflicts over sharing of such water resources in comparison with what has obtained in other regions with a view of improving such region’s cooperation in an effort to achieve the much need peace and stability that is required for the livelihood of mankind. The strategies may inform best practices for other regions at the same time open up opportunities to improve the existing water management strategies in view of growing water demands in the near future for the SADC

region. The knowledge gained from the study could be applied to other resources as other countries can emulate or learn from the experiences of the SADC region. It is also expected that the study will contribute to comparative studies for shared resources, which is important as countries continue to get into ever-increasing demands on the dwindling resources.

1.5.1 Academic Justification

The results of this study would also be invaluable to researchers and scholars, as it will add value to the already existing literature on conflict prevention and provide a framework for further research. The study is expected to make a contribution to, empirical research, after-action reviews, scenario exercises, and simulations to inform the central questions of how best to prevent conflicts in Africa by making use of what the SADC region has adopted as best practice water management strategies that has seen the region collaborating in order to avoid conflicts thus making use of the idiom of prevention is better than cure.

1.6 Theoretical Framework

Gurr examines “the psychological frustration aggression theory in that he argues that the primary source of human capacity for violence is the frustration aggression mechanism”.²⁸ That is that “frustration does not necessarily lead to violence but if sufficiently prolonged and sharply felt it often does result in anger that eventually escalate in violence”. He further explains that “relative deprivation is the discrepancy between what people think they deserve and what they actually think they can achieve”. This therefore, means that “if there exists a significant discrepancy between what they think they deserve and what they actually get, then there is a likelihood of

²⁸Ted Gurr, *Why Men Rebel*. Princeton, NJ: Princeton University Press. 1970.

rebellion”.

This is a result that their needs are not being met and it seems that such needs will never be met and the answer will often be for the affected individuals or a group of such to resort to violence with an intention that their grievances will be addressed or resolved. As such this is often witnessed by groups or individuals rebelling against the administration that ought to guarantee their safety and survival. The study is premised on this theory of relative deprivation which when needs are not met then individuals would more often than not will rebel in an effort to bring pressure to the ruling so that their grievances can be resolved or attend to without fail.

1.7. Hypotheses

The study will be guided by the following hypotheses;

1. Water conflicts arise where there is unequal utilization of the resource amongst states.
2. Effective water management can be used as a measure of conflict prevention.

1.8. Methodology

Methodology refers to the tools for conducting research and obtaining information. It focuses on the research process and the procedures that are used and is therefore, concerned with the processes and the tools for conducting research. It also helps the researcher to accurately carry out a study without any bias.

1.8.1 Data Collection

The data collection methods will include both primary and secondary data. The research is exploratory in nature in that it was conducted in a field of study that has not been studied extensively and more emphasis is on specific perceptions and perspectives of organizations or

countries that were deduced from the actions of individuals and documentation or text from those who are in positions of authority.

The secondary data can be sourced from either published, unpublished and any relevant literature that is available to include and not limited to: internet sources, books, magazines, reports, and journals on conflict prevention, water management, water and conflict, shared water resources and problems emanating from such shared resources and water strategic management initiatives that has been adopted by the SADC region in trying to resolve disputes by making water as a pathway to peacemaking and confidence building among SADC Member States. Other related documents will be reviewed with regard to the SADC Protocol on Shared Water assets which was grasped 1995 and changed 2000. The SADC Regional Water Policy (RWP) of 2005 was made to propel the execution of the procedure. “A Regional Water Strategy of 2006 was created to give the outline to the execution of the Protocol and the Policy. Commonplace Strategic Action Plan on Integrated Water Resources Development and Management” (RSAP 1998). The Regional Groundwater Management Program.

The research also applied the Rational Actor Approach which considers that actors make decisions based on their national interests. Realists are of the opinion that the state is a unitary and rational actor in that states know what they want, and it is basically based on power, security and wealth that drives the state national interests. It therefore means that it is about state survival and any state will do whatever it takes to protect and achieve its national interests. For instance, states have done all they could including waging wars to protect their national interests. It can be argued that it is not always advisable to let states to engage in all-out war but rather it is critical to engage in dialogue and address issues before they escalate into conflicts and this is the main issue that this study is advocating for.

1.8.2 Data Analysis and Presentation

The way the analysis of the data was done on comparative studies from what obtains from other regions and how the SADC region has managed to put in place water management strategies that has over the years diffused conflicts within the region. This has allowed SADC Member States to cooperate and engage either at bilateral or multilateral levels with an effort to share water resources in an equitable and sufficient manner thereby making the region as a model for peacemaking and further ensuring that conflicts can be prevented through effective water management strategies. The study therefore conclude that what obtains in the SADC region can be emulated and adopted by other regions as best practice to avert conflicts that have being experienced in other regions of the world thereby defeating maintenance of peace and stability that every individual state desires for itself and its peoples.

1.9 Chapter Outline

This study will be based on five chapters. The first Chapter summarises a general introduction to the research. It provides the statement of the problem, the objectives, literature review, significance of the study, justification of the study, theoretical framework, hypothesis and methodology. Chapter Two critically examines the challenges faced by states over shared water resources with focus on the SADC region. Chapter Three investigates the policies or agreements put in place by the SADC region in mitigating conflicts over shared water resources. Chapter Four presents a critical analysis of SADC water management strategies. Chapter five presents the conclusion and recommendations of the study.

CHAPTER TWO: SHARING OF WATER RESOURCES IN THE SADC REGION

2.0 Introduction

Southern Africa is synonymous with Southern Africa Development Community (SADC) which comprises of 15 sovereign states i.e. 12 continental and island states being: “Angola, Democratic Republic of the Congo, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe”.²⁹ It was “established in 1992 and is committed to regional integration and poverty eradication within Southern Africa through economic development and thereby ensuring peace and security within the region”.³⁰ “In general, water is a finite and scarce resource in many parts of the world including Southern Africa”.³¹

It must be noted that in some parts of the region there is abundance of seasonal water while in others there is perpetual deficit. “Rainfall is mostly widespread in the northwest of the region which comprises the Democratic Republic of Congo and scarce in the southwest parts that include Namibia and North Western Cape Province of South Africa thereby making a large part of Southern Africa to be water stressed”. The region has also been experiencing high climatic variability and highly unreliable rainfall which has often resulted in the region’s vulnerability to recurring and devastating droughts. It is as a result of these droughts that saw the region in 1991 – 1992 experiencing one of its severe and this has since fuelled the to speed up the implementation of regional integration and water resources management strategies (See Figure 2.1 below). Further to this, the “region is endowed with an immense and wide variety of natural resources which includes”: “minerals, wildlife, forests and fisheries which collectively form the

²⁹Southern African Development Community: About SADC. www.sadc.int/about-sadc/. Assessed on 25 October 2017.

³⁰ibid.

³¹ibid

region's ecosystem which support a rich biological diversity which could ensure food security".³²

The region's primary "objective of integration and cooperation among its member states was based on a coordinated, sustainable and integrated development and management of the region's resources which has and continue to contribute to the regional goal of attaining an integrated regional economy built and developed on the basis of balance, equity and mutual benefit for all member states".³³ "Water management has played a pivotal role particularly in support of the SADC objectives of poverty reduction, food security, energy security and industrial development as well as being an instrument in promoting peace and cooperation amongst its member states".³⁴

It was on the above, "that more focus was on developing a strategy on managing the region's scarce water resources and in particular the management of transboundary watercourse systems". "Water has played a major role for the regional integration's in the SADC At that point it was changed to the Southern African Development and economic development that has been recognized and appreciated by all SADC member states that has seen the SADC Secretariat been charged with the responsibility of coming up with interventions and mechanisms thereby taking a lead in steering the process".³⁵ "In addition, the SADC Water Sector was also established in August 1996 renamed the SADC Water Division" (SADCWD).³⁶ The division is charged with the responsibility of overseeing the harmonization of national water use policies and also to moderate transboundary issues. It also aims at "ensuring that water in Southern Africa is used in a sustainable and equitable fashion through facilitating cooperation among SADC Member

³²J.P. Msangi, Managing Water Scarcity in Southern Africa: Policy and Strategies. www.springer.com/cda/content/document/cda.../9789400770966-c2.pdf?SGWID. Assessed on 25 October 2017.

³³J.P. Msangi, Managing Water Scarcity in Southern Africa: Policy and Strategies. www.springer.com/cda/content/document/cda.../9789400770966-c2.pdf?SGWID. Assessed on 25 October 2017.

³⁴Southern African Development Community: About SADC. www.sadc.int/about-sadc/. Assessed on 25 October 2017.

³⁵Ibid

³⁶Southern African Development Community: Water and Sanitation. www.sadc.int/themes/infrastructure/water-sanitation. Assessed on 25 October 2017.

States in treating water as a regional resource that requires management and protection across national boundaries”. It is the above “arrangements that provide an opportunity that clearly outline effective dispute resolution processes negotiated by Watercourse States before the conflict arises”.

Where “attempts to prevent disputes have failed, there is need for coordinated planning and joint management, followed by other dispute resolution mechanisms such as negotiation, conciliation and mediation in case of disputes escalating to arbitration”.³⁷ It is these dispute resolution mechanisms adopted by the SADC region that has seen the region in achieving regional cooperation through trust and peaceful collaboration and this can be emulated by other regions in resolving disputes peacefully.



Figure 2.1: The Countries Southern Africa (Seychelles island is not included in the map) Source Malzbender, D., & Earle, A. (n.d.). Water resources of the SADC: Demands, dependencies and governance responses

³⁷ibid

The SADC region is blessed with a wide variety of resources, including minerals, natural life, backwoods and fisheries. On the whole, these normal assets form complex environments which bolster rich natural differing qualities. There is extraordinary variety in water accessibility with nations, for example, countries of South Africa and Zimbabwe with about 1,100 and 1,500 cubic meters for every individual a year discretely and the country of Mozambique and the Democratic Republic of Congo having 11,000 and 22,000 cubic meters for each individual a year.³⁸ Notwithstanding this spatial inconstancy there is a responding likelihood of droughts which has resulted in the region having to experience shortage of food supplies thereby frustrating the SADC objectives of achieving a sustainable food security and affecting most of the inhabitants in the region (See Figure 2.2 below).

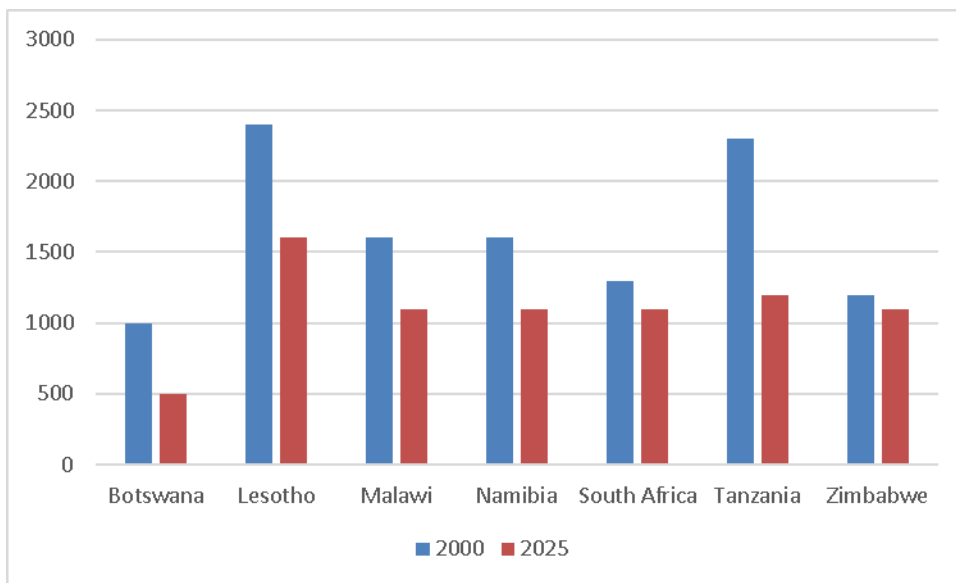


Figure 2.2: Water accessibility in the arid SADC (after Ashton, 2002)

The world is on track in meeting the drinking water target, but Sub Saharan Africa lags behind in that progress was also impressive that is, coverage increased from 49% to 58% between 1990

³⁸L.A. Swatuk, 'The State and Water Resources Development through the Lens of History: A South African Case Study', Water Alternatives, 2010, Vol. 3 No. 3: 521-536.

and 2002.³⁹ This percentages falls far short of the progress needed to achieve the Millennium Development Goals (MGD) target of 75% coverage by 2015.⁴⁰ Challenges in “accelerating the rate of progress in Sub Saharan Africa include among other factors”; “conflict and political instability”, high rates of population growth coupled with high demands for water needs which calls for effective management of such scarce resources that the SADC region has adequately addressed by coming up with water interventions management strategies that benefit all SADC Member States. This chapter therefore seeks to look into the water resources sharing in the SADC areas.

2.1 The SADC Trans boundary Clearwater Sources

The SADC region consists of 12 mainland countries connected by twenty one different river basins that pass through the global political boundaries; fifteen among them are the utmost beneficial in socio-economic development terms. The growth of the SADC economy is supported by the presence and abundance of water resources in the region. “Renewable water resources in Southern Africa amounts to around 2,300 cubic kilometres per year”⁴¹ Most of these waters are distributed unevenly and flows from transboundary rivers with the remainder from lakes and groundwater. The majority of these waters are mainly used for irrigation which contribute immensely to food security which is one of the SADC regional objectives and the second largest user is the industrial sector which is also growing tremendously.

According to United Nations statistics, 62% of the SADC’s population “has access to clean drinking water, whereas 39% has access to adequate sanitation facilities”.⁴² The impacts of

³⁹ Drinking Water Coverage. www.who.int/water_sanitation_health/monitoring/imp04_3.pdf. Assessed on 26 October 2017.

⁴⁰ Ibid.

⁴¹ Transboundary Water Management in SADC. <https://www.giz.de/en/worldwide/14931.html>. Assessed on 26 October 2017.

⁴² Ibid.

climate change has adversely affected access to water resources because it is becoming difficult for countries to manage the scarce and unequally distributed water resources. This has therefore, compelled SADC Member States to come up with agreements on how to share such a resource “through international conventions and regional protocols. Numerous policies, plans and strategies have been put in place to address issues on how to manage shared transboundary water resources”.

The SADC region’s groundwater is also a crucial resource, in that most of it is used by people in the rural areas as they rely on it for consumption purposes. The livelihood is heavily dependent on the existing groundwater that has helped many parts of the populace to minimize the effects of poverty. This on its own has facilitated SADC Member States to have a strong foundation on how best to share such scarce water resources that cuts across many countries within the SADC region. It has also provided ways for the SADC region to effectively manage its water resources thereby preventing conflicts that might arise out of such a sharing of a scarce resources. The mutual trust and cooperation that exist within the SADC region is a true reflection of what cooperation between member states have over the years strengthened and continue to grow from strength to strength with the whole aim of doing all they could to avert conflicts for the sake of mankind and providing a window for dialogue and cooperation that can enhance an equitable sharing of water resources.

2.2 Sharing of Water Resources in the SADC Region

There are three distinctive general classifications of trans-limit water resources found in the SADC area. Arrangement 1 involves those trans-limit conduits, whereby not most of the riparian states are people from SADC. Consolidated into this grouping are the “Chilongo basin, Congo

waterway basin, Lake Natron basin, Nile basin, Pagani and Umbaa basins”. Characterization 2 contains those trans limit streams such that all their riparian states are as a people from SADC. This contains two specific subsets; Class 2a includes streams that contains basic fragments of their basin in various riparian nation.⁴³ This subset involves the Cunene subset, “Incomati subset, Limpopo subset, Maputo subset, Okavango/Makgadikgadi subset, Orang/Senque subset, Ruvuma, Savée - Ronde, Umbeluzi subset and the Zambezi basin”. Characterization 2b contains streams that are depicted by basins that the greatest degree of the part is in one state.

Class number 3 comprises of the fundamental waterways that have hydrological that are particular reigns that did not offer anything to the construction of huge dams, for the most part being by nature endorheic, however, on occasion additionally fleeting and by this they are connected close groundwater. This implies a lopsidedly extensive populace that is reliant on a water source that is for the most part very unpredictable and sporadic. The Cuvelai and Lake Chilwa basins are included in this class.

Three of the trans limit conduit bowl, the Incomati conduit basin, Limpopo and Orang/Senque conduit basin which come to (or will accomplish) the reason for full conveyance and are by and large have been put in place to address issues of water shortages.

2.2.1 Sharing of Water Resources in the SADC Major River Basins

The main river basins have been discussed in detail in this section which includes and clearly indicate how water is shared among the SADC Member States in particular through coordinated and collaborative management strategies.

⁴³A.C. Vas, & A.L. Pereira, Management of International Water: Problems and Perspective. UNESCO, Paris. 2013, 142 pp.

2.2.1 Incomati River Basin

The Incomati River Basin is located in the eastern region of Southern Africa and is shared by three countries namely: South Africa, Swaziland and Mozambique. “Economic developments have resulted in increased water use since the 1970s”.⁴⁴ Water is mostly used by forest plantations, domestic, industrial sector and irrigation is for agricultural production. Major dams have been constructed and commissioned to meet the increased water demands as from the late 1960s.⁴⁵ “The construction of the Moamba Major dam on the Mozambican part of the Incomati river coupled with the expansion of the Corumana dam along the Sabie river, is the main tributary of the Incomati river”.⁴⁶ Water from these reservoirs has been used to supply water to Maputo (Capital of Mozambique) and further “increase the irrigated area especially for use by sugar cane plantations. All these developments have boosted the economies of the three riparian countries” (South Africa, Swaziland and Mozambique).

Sustainable management of the Incomati water resources is one of the responsibilities of ARA-Sul, “which is the water agency responsible for the river basins in Southern Mozambique, including the transboundary flood prone rivers of Limpopo and Maputo”.⁴⁷ “It is also involved in the hydrological modelling including water availability, dam construction or operation and flood forecasting”. ARA-Sul is “facing the challenge to meet water demands due to long-term water availability as a result of climate change, while on the other hand, the growing population, the increase in agricultural areas and industrial development has led to an increase in demand for

⁴⁴Development of a Water Allocation Model of the Incomati River Basin. www.futurewater.eu/projects/incomati-2/. Assessed on 26 October 2017.

⁴⁵Development of a Water Allocation Model of the Incomati River Basin. www.futurewater.eu/projects/incomati-2/. Assessed on 26 October 2017.

⁴⁶Ibid.

⁴⁷Mozambique Regional Administration of Waters in the South (ARA-Sul). <https://www.ara-sul.co.mz/>. Assessed on 27 October 2017.

water”. “To overcome this challenge, effective and targeted water management was necessary resulting in ARA-Sul taking decisions on both the strategic and operational level”.

For instance, “strategic decisions involving the construction of new and/or the expansion of existing reservoirs, inter-basin transfers, and the renewal of the distribution network has been implemented”. In terms of operational decisions, granting permits have been made for new users whereby management of daily releases from existing reservoirs have to be regulated. To this end, “a two water allocation models were developed in this project to support policy evaluation and improve strategic and operational decision making procedures”.⁴⁸ In addition, “WEAP was chosen as a modelling framework where different scenarios were developed and implemented in WEAP to show the impacts of possible changes and the associated effects of such possible adaptation measures”.⁴⁹ To achieve the intended results, the ARA-Sul staff was actively involved in the project in order for them to interactively learn and be able to apply the lessons learnt and further improve on the developed models.

The project took place in the Incomati River Basin and was carried out as a pilot project in the Umbeluzi basin in 2014 using a similar approaches and was extended to other basins that were managed by ARA-Sul. “In this way the water management organizations in Mozambique were able to share their knowledge”, and experiences in order to accelerate the capacity building process which has continuously assisted the country and can be replicated in other areas to afford all concerned to benefit from such scarce resources.

⁴⁸ibid.

⁴⁹ibid

2.2.2 Kunene (Cunene) River Basin

The Kunene river basin is located in the southwest of Africa. It “rises about 32km southwest Africa in Angola and flows southwards from the Angolan highlands to the border with Namibia, it then turns west forming the border between the two countries until it reaches the Atlantic Ocean”. It is one of the few perennial rivers in Southern Africa which covers an area of 106, 500 km², with 14, 700 km²

(13.3%) in Namibia and 95,300 km² in Angola.⁵⁰ Since the basin benefits communities in the above mentioned countries, there is need for the two countries to address issues relating to sharing and management of water resources.

2.2.3 Limpopo River Basin

The Limpopo River has 4 distinctive nations. Republic of Botswana is from the upstream of some branches and has an unforgiving atmosphere and dry. The nation of Southern Africa and Zimbabwe are situated at the inside areas of the river, the outskirts isolating them being the Limpopo shaping between them. The nation of Mozambique is the downstream state riparian where the Limpopo stream passes over a major surge plain. No dams are situated on the streams principle stem and here it frames outskirts between nations, so no motivation to deal with the water powered foundation together. Future dams can be shaped on a tributary that partitions South Africa and the condition of Botswana. The basin is purposely critical to these nations for various reasons. For Botswana, it bolsters the enormous populace that exists in a belt affected between the Desert of the Kalahari and the tight line of better-watered land that is quick toward the South African fringe.

⁵⁰ The River Basin – Kunene River Awareness Kit. www.kunene.riverawarenesskit.com/KUNENERAK_COM/EN/RIVER.HTM. Assessed on 26 October 2017.

For South Africa, it has mining and farming successful, too it bolster the huge populace, and it likewise realizes a broad natural asset for the greatest stop in South Africa Park known as the Kruger Park.⁵¹ Zimbabwe rely on upon it and it's their basic wellspring of water other than the Zambezi waterway, which is hard to make because of political purposes behind both flooded cultivation. In Mozambique, the Limpopo is the fundamental dependable clean water in an incredibly dry some part of the nation with a direct huge populace. The stream basin is closed, or rapidly advancing toward conclusion, and clean water assets in Southern African piece of the bowl has in time been over-assigned. There is not plausibility for a liberal future day's change of benefits, in spite of the fact that a couple dams are so far to be seen, so a noteworthy test in the basin adds to three main issues.

To start, the desire to change clean water from the agro-monetary division to the mechanical part is a hard and a very complex one. all the more along these lines, the nature of the water administration is a major concern, for the most part as the consequence of fundamental source contamination originating from mine conclusion, the corrosive mine seepage, sewage squander gushing return streams advancing sprouts of perhaps lethal cyanobacteria and endocrine that upsetting chemicals. At last, significant concern are on value issues, with an alternate measurements seen to this issue. Water-sharing courses of action identifies with the International value, particularly with Mozambique been undermined over the previous years. Intergenerational value identifies with the streams of biological through the Kruger Park. The matters of racial value are particular and pivotal to the nation of South Africa, where verifiably the impeded agriculturists have the inclination for moving and changing the administration bolster. Arrive

⁵¹B. Bii, Strain at Kenya-Uganda outskirts over stirring. Day by day Nation, October 3, 2012. <http://www.nation.co.ke/News/-/1056/1523908/-/xtc5qbz/-/index.html>

claims that are later have give out homesteads to groups that were prior seized, with their desires high, putting extra requests on the over-designated asset.⁵²

2.2.4 Okavango River

The Okavango Delta was made as a result of the activities of basic, together with the accuse lines which are connected with the famous Great Rift Valley of the landmass of Africa clarifying points of confinement and the ecological stream of non-dry land, which is Ramsar site. “A weight driven affiliation is accessible between the Zambezi River through the Salinda spillway, with the back overflowing into the Okavango in the midst of the seasons of high stream into the Chobe/Linyanti/Zambezi. Once in a while, the Okavango Delta surges and onto the Thamalakane across line through the Boteti River into the Makgadikgadi holder of salt, moreover maintained by Nata River, coming into Botswana from neighboring Zimbabwe.

Depicting the general stream bowl, there are maybe three or conceivably 4 riparian nations. The bowl is stationary central to the states for a couple explanations. Each one of the ninety five percent of the water streams in the Okavango basin structure begins from Luanda and the strategy of the conductor addresses a potential hydropower and the water system asset for the excitement after the contention of a place affected by the Civil War in Angolan and the War in Namibia of the Liberation”. It remained Namibia of the second and most essential conductor basin , with the get ready for utilization of its advantage generally speaking go down, in this way permitting the streams in different unmistakable of Water Carrier called ENWC structure to pulled in beneath to the below levels.⁵³

⁵²E. Delbourg, and E. Strobl, Cooperation and conflict between upstream and downstream countries in African transboundary rivers. Paris: Ecole Polytechnique, 2012. Available at: <http://www.feem-web.it/ess/ess12/files/papers/delbourg.pdf>

⁵³A. Codd, J.S. Metcalf & K.A. Beattie, 'Retention of *Microcystis aeruginosa* and *microcystin* by salad lettuce after spray irrigation with water containing cyanobacteria', *Toxicon*, 37, 1999, pp. 1181–85;

This is fundamental due to the high spread incidents in Namib, so a fundamental fortress, basic hold like the Okavango enables Namibia to redesign utilization of its forward and backward development resources, secure in the finding that in the midst of times of dry season, there will be an endeavored and real move down. A line of pipe has been required to get clean water at the town of Rundu and exchange this to ENWC, at last passing it to the structure of reticulation that reinforce the city, Windhoek.⁵⁴

For Botswana, it counsel with an advantage for country occupation bolster, and the organization of money via ecotourism. Botswana has formally tried to use the advantage for removal, however this was vivaciously limited. In the event that Botswana develops the advantage, this preferred standpoint opened the way to the Namibian arrangements, so there is to some degree checkmate condition winning. Open weight in Botswana is top, where Namib is depicted by media like "repulsive" neighbor aiming to twist up clearly uncommon the Okavango Delta. The exchange is without any truth, and the Namibian government attempted and valid, with a reputation of the cooperation each and every through it short however stable closeness.

2.2.5 Orange River Basin

The well-known Orange River is among the unpredictable basins. Not at all like a large portion of the other complex basins at hazard considered by Wolf et al, military clash has ever drawn out in the Orange basin amid present day times these circumstances being the aftermath of the Second Anglo–Boer War. It has been accessible has for a while been short and a concentrated, ordinarily done by the Special Forces with the surgical precision, yet once using the standard powers that are under SADC summon in the midst of the major Operation Boleas. The riparian situated in Lesotho, with a high monetary dependence on the nation of Southern Africa. Southern

⁵⁴ J. Mendelsohn, & S. el Obeid, *Okavango River: The Flow of a Lifeline*. Cape Town: Struik, 2004.

Africa contains a top and financial reliance on the Orange basin, with a 100% stunning of the GGP of the Gauteng Province being completely subject to between basin exchanges that are including the Orange-basin framework. Namibia on the other hand is the downstream riparian with an elevated reliance on the Orange bowl for the fiscal action in the southern parts of that state.

The instance of Botswana is fascinating, this is in light of the way that it bears no stream and does not utilize the water at first glance around the waterway, yet seen as state by ideals of the courses brief Nossob and Molopo, they both packaging the outskirts with South Africa, and they have not made a quantifiable weight driven impact to the Orange. Botswana uses its honesty to goodness rights to engage in every one of the exercises of a "traditional" riparian nation. As a result, this has opened the way to the prospect of water supply from the LHWP settlement, and the agreement is in reality useful, yet maybe too exorbitant to be in any capacity sensible in this period.⁵⁵ Regardless, Botswana expect a basic part in choices around the coming change of the basin later on, utilizing hydro the political power past the goals in view of the alteration in movement that it can make by voting in any way on the broad organization broaden. This is the reason the subtle elements of the Zambezi River basin, as clarified in the following part, are vital and urgent inside the general structure of the SAHPC.

2.2.6 Zambezi River Basin

The Zambezi River is a complex basin at hazard as Wolf and hisco – researchers clarified, provided the gigantic number of riparian countries (eight). With this sum, it is a not too bad instance of the use of Pike's Law, given the regular inconvenience of accomplishing a comprehension among the different sovereign countries, each with its own one of a kind change

⁵⁵G. Borchert, & S. Kemp, 'A Zambezi aqueduct', *SCOPE/UNEP Sonderband Heft*, 58, 1985, pp. 443–45;

and with a likelihood of confining perspective of the different nation's interest. Diminish Pike henceforth the name Pikes law. He was a specialist at ORASECOM, who kept up that the principle level of exertion that is expected to venture into an understanding had increments by precisely the main number of the individuals who took an interest.⁵⁶ This was however rephrased into a solitary hydro political rule which was expressing that the most probability of individuals coming to an assertion was diminishing by the 3D shape of the main number of those partners included. This additionally implies in particular rivers like the Zambezi stream and the Nile waterway with a major sum of speculators, the probability of accomplishing a basin wide settlement is to a great degree hard, and where achieved, will be a consequence of the most reduced shared element and will set aside a long opportunity to change presumably decades.

2.3 Water Resource Conflicts in SADC Region

With the making water require in the SADC zone and the huge number of shared streams there, it is not shocking that sensible exchange among SADC individuals have made in various dishes. Dams on shared streams, and redirection of surges of such conductors, are the fundamental driver of such question. It is kept an eye out for that the change of the M'njoli dam in Swaziland over the Umbeluzi channel (shared by Mozambique, Swaziland, and South Africa) has lessened the surge of water of the Umbeluzi stream to Mozambique by on an exceptionally essential level a half. The difference in the Driekoppies dam in South Africa over a tributary of the Incomati channel (which is shared by Mozambique, South Africa and Swaziland) has raised worries over the decreasing of open changing area in Swaziland in light of flooding.

⁵⁶J. Waterbury, *Between Unilateralism and Comprehensive Accords: Modest Steps toward Cooperation in International River Basins*. World Resources Development 13:3, 1997, pp. 279-89

Another potential dangerous wind is the proposal to have around 17 million cubic meters of water from the Okavango stream by Namibia, and trading it through a 260 Km. pipeline to Namibia's Eastern National Water Carrier. The Okavango channel is shared by Angola, Namibia, Botswana and Zimbabwe. In spite of how the breeze is still under survey, concerns have been brought up in the 9 other riparian nations about the possible negative effect of the wind, especially on the Okavango Delta in Botswana. Additionally, Mozambique, being among the most diminished riparian to the eight of its nine vital shared channels, is unconvinced of the other riparian's objectives as for those key courses.⁵⁷

Regardless of the going all round and non-navigational utilizations, comprehensive streams dishes and lakes fill in as points of confinement disengaging diverse nations on the planet. Confines between expansive amounts of nations in Africa lie crosswise over more than one of the different general conduits and lakes shared between them. Despite the way that cutoff points, when in doubt are apportioned by arrangements, the issue of deciphering those arrangements with regards to the correct locale of the limit over the normal stream has begun bouncing up in Africa. The countries of Namibia and Botswana broke down the line keeping their motivations of confinement over the Chobe conductor river, and henceforth analyzed the dedication with respect to the land on the stream, called Kasikili Island by Namibia, and Sedudu by Botswana. Endeavors to pick question via techniques that begun in the year 1990, fizzled, and the main issue was recommended, picked by the International Court of Justice in the year 1999. It explained the Treaty in 1890 disengaging the cutoff point's amongst the two nations in order to put the explanation behind restriction in Chobe's northern channel that accomplishes the land being a touch of Botswana.

⁵⁷L.A. Swatuk, 'The State and Water Resources Development through the Lens of History: A South African Case Study', *Water Alternatives*, 2010, Vol. 3 No. 3: 521-536.

In this way, South Africa and Namibia conflict significantly based on the line isolating their points of confinement over the Orange stream. The Orange channel shapes the points of confinement amongst the two nations for whole of southern edges of Namibia with Southern Africa. Namibia shows the veracity of that the fringe ought to be inside line of the Orange course. Then again, South Africa expect that the edge ought to be the most crucial piece of the course, that would be on the northern part water stamp, but not the reason for converging of 10 stream. Malawii with Tanzania conflict concerning edges of their own transversely over Lake Malawi. Beginning at now, the edges keep passing along the shores of Tanzanian, setting the lake under Malawi's control.⁵⁸

Basson gives a diagram of components of potential clashes on shared water assets and proposal for enhanced participation between the diverse clients of water in the SADC area. Conflicting requirements and perspectives between countries regarding the use of water could in like manner provoke conflict, particularly as the motivation behind full resource utilize is come to. Mozambique, as the most downstream country of the three shared stream structures, has adequately conveyed stress on a couple of occasions over upstream headways. One grievance is that decreased freshwater stream into the ocean has made damage coral reefs and prawn banks in Mozambique, and seawater intrusion into a couple of streams. Taking after expanding water use in riparian nations in the Limpopo stream, for example, in South Africa for water system (around half of all water utilizes as a part of the waterway), mining, modern and residential utilize and in Botswana and Zimbabwe, this influences the most downstream Mozambique with enthusiasm for extending water system and household water supplies.⁵⁹

⁵⁸O. Mkone, 'Water wars: The Okavango is already drying up and if more water is drained off, it is not just tourism that could be affected', *New African*, April 1997, p. 18;

⁵⁹P. Townsend, *Poverty in the United Kingdom. A survey of household resources and standards of living*. Harmondsworth, Penguin Books, 1979.

The Incomati waterway basin (of which the Sabie stream is a basic tributary) travel through Swaziland into Mozambique and the Maputo conduit basin (of which the Usutu and Pongola conduits are fundamental tributaries) flow through Swaziland into Mozambique. Taking after expanding mass number of individuals along the upper spans of the Sabie waterway and its requirement for extending water system and residential water, would affect water assets and supply in Mozambique. Mozambique likewise grumbled on the absence of adequacy of surge control at Pongolapoort Dam in South Africa. Incongruent order and mechanical systems may moreover incite misguided judgment, uncertainty and exchange perspectives between countries concerning the capability of water use and resource organization. It was furthermore seen that profluent return streams and extremely saline mine pump age, are applying a basic impact on the water way of the Vaal conduit downstream of urban core interests. The water quality along the lower Orange stream is as yet awesome however the trading of water from the Senqu conduit (upper Orange stream in Lesotho) to the Vaal conduit, solidified with lower-quality streams from the Vaal stream into the Orange stream and moreover water framework return streams are antagonistically affecting the water assets of the Orange waterway.

The difficulties of route from on the Shire-Zambezi course and open deliberation about characteristic security on the Okavango are two distinct instances of conflicts that have risen on shared streams, in both cases, driven by little social occasions of national accomplices (political and transport interests in Malawi, tourism directors in Botswana) who have winning as to raising their stresses, with external support. Malawi's uneven attempts to open this course, building an inland port and attempting to journey a speedboat from Mozambique to the opening

administration, gone to by three heads of state, was seen as particularly provocative and provoked the catch of a Malawian government official on the vessel.⁶⁰

There is moreover, the aversion of Zambia to join the ZAMCOM assertion was to some degree in view of the fear that its normal upgrades might be obliged by objections from various riparians. However those sentiments of fear are not substantiated. Late audits have shown that solitary if they develop their water-based agribusiness and vitality to the uttermost scopes of the potential may there be basic impacts downstream. Also, before that happens, they will starting at now have expected to consider tradeoffs between sections inside their cutoff points instead of past them⁶¹

The Okavango gives another case that mutilation of the risks may itself actuate strife. The Okavango is Southern Africa's third greatest stream, with a typical stream like that of the Orange-Senqu which supplies a critical bit of South Africa's family and economy. It is at this moment for all intents and purposes flawless, with no immense thoughts. Regardless, while in the midst of an extraordinary nearby drought in 1996 the Namibian government proposed to separate a little degree (0.2%) of the conduit's stream to address regional issues in the north east of the country, there was a gigantic reaction from Botswana and the worldwide characteristic gathering. It was raised that the proposed plan could over the long haul take up to 6 times more than the at first masterminded entirety (1.2% of the stream). It was advised that the perspective set could be the begin of the end for the intriguing wetland.⁶²

Military clashes that have been involvement, their area have been the Zambezi waterway basin amid the seasons of war particularly the chilly war. Jamba was the base camp of the of the

⁶⁰Shabelle Media Network. Somalia: Ethnic fighting renews in lower Juba region, South Somalia. August 15 2012. <http://allafrica.com/stories/201208160039.html>

⁶¹SADC (2010a). SADC guidelines for strengthening river basin organisations: Stakeholder participation. www.sadc.int/documents-publications/.

⁶²SADC (2007). Regional water policy and strategy. Infrastructure and Services Directorate. http://www.kunenerak.org/_system/DMSStorage/4071en/pdf.

UNITA development in the nation of Angola. This development was a revolt and it was between the Cuando River in Zambezi and the Cuito River which was a tributary of the Okavango. Struggle was seen here that was of an ordinary way and a ton of minefields are as yet present there to date.⁶³

A play region for the guerrilla was formed downstream in the valley of Zambezi and here the war was considered as the Rhodesian war or the Zimbabwean war for flexibility. The conflicts amidst the council and the guerilla understood the war here as they penetrated from the country of Zambia the defiant RENAMO advancement in country of Mozambique was quite recently situated around the Merinigue and the Gorangoza massif, with a noteworthy war in the Zambezi river domain. It this is the place apparently the feud was most developed and viable. The Beira way was the most basic bit of the economy of Zimbabwe and it was going up against a threat by the qualities of RENAMO making the lawmaking body of Zimbabwe pass on its troop for the protect of the establishment on 31st may year 1982. The establishment to NPA, agreed in year 1984.

The dispute in lower Zambezi basin which was outfitted was for the most part of the method for guerrilla warfare and counter-revolt, that few standard wars that were characteristic of the Angolan reach of Cunene/Cuvelai and Okavango bowl.⁶⁴ There is no correct purposes of intrigue that is recorded wherever about the hydro politic of dishes. In spite of the way that a couple of makers have covered a noteworthy some segment of it regardless Regime course of action in the river backpedals to working of the Kariba Dam in the 1960s, and this happened with assent from the specialists of the conduit Zambezi for the vitality of handling the hydropower with the

⁶³S. McCarthy, & W.N. Ellery, 'The Okavango Delta', *Geobulletin*, 36, 2, 1993, pp. 5–8; Scudder T et al., *The IUCN Review of the Southern Okavango Integrated Water Development Project*. Organ: IUCN Communications Division, 1993;

⁶⁴T.R. Gurr, *Why Men Rebel*, New Jersey: Princeton University Press, 1971.

wander. ZRA is a corresponding course of action among Zimbabwe and Zambia and it has a request which is also obliged.

2.5 Chapter Summary

For the growth of economy and the development in Africa to take effect, water is the major and a vital key component. In the fact that the above mention are used and shared among countries in Africa, this means that pact is a crucial issue among the structures of the government. I this chapter, there is a clear indication that there is a highly note exit issues in the SADC pact which is supported by enabling of legislations like the SADC WP. This cannot be found in other states of Africa and can bring a hindrance in transboundary resources of water. Water cannot bring about conflict between countries Parallel national acts are processes that can be used by dropping any fear of destruction of state power to enhance co-operation.

CHAPTER THREE: WATER MANAGEMENT IN THE SADC REGION CONTEXT

3.0 Introduction

Manageable water resources in southern Africa indicate around 2,300 cubic kilometers yearly, yet these are appropriated unevenly across over very dry and tropical zones. Around 70 for every penny of this water begins from transboundary conduits, and whatever is left of lakes and groundwater. A large portion of the yearly resources are used for rustic water framework; regardless, ask for from the advanced fragment is creating and it is by and by the second-greatest customer. According to data from the United Nations, only 62 for each penny of the masses in the Southern African Development Community (SADC) approaches clean drinking water, and only 39 for every penny approaches palatable sanitation workplaces.

The impacts of ecological change make it impressively more difficult to manage the uncommon and unequally dispersed water resources. This infers the progression of water establishment, particularly dams to store water and oversee levels, is getting the chance to be obviously growing basic. The SADC part states have yielded to the measures of shared and fused water resource organization through overall customs and regional traditions. Different methodologies, game plans and frameworks have been drafted to this effect. Joint exertion among SADC pact nations is set up in the fairly big number of individual and multi-level understandings completed up by some of those nations. It is in like way showed up in the conclusion by a great many people from SADC of two conventions administering shared channels in the SADC territory.

This section gives some point of view on the direction of territorial cooperation on water asset improvement and administration over shared water assets in the SADC district. Thusly, the victories and difficulties of the water division are not only representations of the more extensive

difficulties that have confronted the district's joining forms. They additionally give pointers towards various methodologies that may be considered later on.

3.1 Regional Legal and Institutional Framework

In August 1992, the Southern Africa Development Community was set up by the SADC Treaty. The objective of the SADC is to grasp a masterminded neighborhood economy on the introduction of change, regard and standard favored viewpoint for all Member States. Key objectives are hosing helping, sustenance security and mechanical change. The central general favored perspective for fulfill these destinations, including the eight Millennium Development Goals appreciated by the United Nations (UN) in 2000, is to update utilization of groundwater sources. The oversee part behind this is water supply plots that utilize groundwater can be related with serve different more insignificant parties in the trademark spaces in the SADC and could most obviously be appeared to be well and great less cost than show day, titanic scale and capital concentrated had water supply structure.

Article 22(1) of the SADC treaty makes technique for the aggregate of traditions to deal with specific problems and beneath the specialist of the Water Division in the SADC Secretariat the SADC Member States drafted a Protocol on Shared Watercourse Systems in the SADC and afterwards changed the Protocol to adjust it to the United Nations Convention on the Non-Navigational Uses of International Watercourses, gotten in 1997 by the General Assembly of the UN. Expelling the way that the Revised Protocol on Shared Watercourses in the SADC handles shared (surface) channels, the concern of groundwater is unequivocally not vexed in light from guaranteeing the course that in Article 1 a conductor is depicted as "an arrangement of surface and ground waters including by morals of their physical bond as a unitary whole a surprising bit of the time spilling into a typical end, for instance, a sea, lake or aquifer". It can along these lines

be battled that groundwater can be poor down into the Articles in the procedure that make structure for the aims, General Principles and Precise Provisions obliged surface water in the Protocol and can be associated mutatis mutandis to groundwater in Southern Africa. The Protocol other than watches existing course understandings that have been gone into prior to the Protocol came into obligate. These understandings blend those that enacted the establishment of River Basin affiliations; however the Protocol requires the coordination of those concurrences with the frameworks in the Protocol. By altering of these approaches of the Protocol, there lacks control to set the common relationship of shared aquifer structures under the noteworthiness course assertions and unmistakably the instruments of wide water law in the SADC district in a general sense cover all concentrations related to ground water association.⁶⁵ The SADC states in this manner have an affirmation to control groundwater inside the true blue system given by the Protocol. Particular SADC countries gone into understandings to set up water commissions with goal to go about as a particular manual for the constricting parties on issues concerning the security, change and application of water channels of major vitality for a shared basin.

3.2 Water Management Protocols in the Big River in the SADC Area

The main river basins have been discussed to a greater detail in this section which include spell out how water is shared among the SADC region through cooperative management.

3.2.1 Incomati River Basin

There is different specification of the basin that The Incomati River basin has gone through over a period of time. In the year 1926 where an agreement was signed between the states of South Africa and Portugal, this was the first use agreement and was based on managing the Cunene

⁶⁵L.A. Swatuk, 'The State and Water Resources Development through the Lens of History: A South African Case Study', *Water Alternatives*, 2010, Vol. 3 No. 3: 521-536.

basin of which it also included to its pact different river between south and the colony Portugal which by the time was controlling the lands of Angola and Mozambique. Above from being primarily about the Cunene river, the pact was to greater extent about the Incomati, Maputo and Limpopo since it was the one laying foundation for all these basins.⁶⁶

The second pact was reached in the year 1964 and the pact was between Southern Africa and the colony Portuguese. Just like the other first agreement, this was also based on the Cunene, Incomati, Maputo and Limpopo basins. Swaziland agreed to the 2nd use agreement which was based on the Cunene river basin and the other rivers of mutual interest. This showed a specifically historical moment of evolution from these rivers in subject.⁶⁷ Putting to the Limpopo, the Incomati and the Maputo basins, the TPTC pact became the first wide basin governance in the year 1983 in south hence applying to the three river basins namely the Limpopo, the Maputo and the incomati basins. This was not seen through due to the Zimbabwe quest for freedom, the cold and the civil wars. This helped sustaining of the relationship between Mozambique and the south.

After that failure, there was a pact signed between the lands of Swaziland and Mozambique. The agreement was known as the Joint Permanent Technical Water Commission (JPTWC), and this agreement never functioned properly, and in 1992 there was agreements signed between the two countries. The agreement included the Commission of water called JWC1 and the 2nd founded the Water Authority of Komati Basin (KOBWA).in order to manage the Limpopo and Incomati basin there was a bilateral agreement signed between the two countries again in the year 1996.

⁶⁶L.A. Swatuk, 'Environmental Security'. In: Michele Betsill, Kathryn Hochstetler, Dimitris Stevis, eds, Palgrave Advances in International Environmental Politics , Basingstoke: Palgrave Macmillan, 2014, pp. 212-244.

⁶⁷E. Delbourg, and E. Strobl, Cooperation and conflict between upstream and downstream countries in African transboundary rivers. Paris: Ecole Polytechnique, 2012. Available at: <http://www.feem-web.it/ess/ess12/files/papers/delbourg.pdf>

When the hostilities experienced in this country came to a tragic end, both the civil and the cold wars ended in the country of Mozambique and the apartheid rule was diminished altogether. This boosted the normality to both the state and hence creating a strong bond between the two states by restarting the TPTC pact and this ended successfully after the 2002 treaty signed between the Incomati and the Maputo basins. This agreement was so crucial and important since it recognized all the riparian's states with all the water details and a quality formulae.

There is evidence from the above noted points that about seven regimes were present in the Incomati basin over the period. And this is when the small pact and the regional ones are excluded.⁶⁸ In the year 1948, the Southern African Regional Commission for the Conservation and Utilization of the Soil (SARCCUS) pact was formed. The pact has ten different committee of which one of the committee is only based on the water resource. SADC was formed towards the end of the Cold War which later was known as SADC FP when it started to be utilized. This generated a framework which was regional and by that, the future parties that would join would have been structured from that. Even though that was not a water pact, the regime was very crucial since it generated the environment a way which all the relations of the regional are controlled, including Clearwater.

In the year 1984, there was a treaty signed between the two states of south and Mozambique. The pact was called the Nkomati Peace Accord (NPA). This was formed to give hope to other region that other pact that was not hostile would be formed in the time of military wars. There are 4 different and non-basin pact formed and they were just applicable to the Incomati basin. There

⁶⁸B. Bii, Tension at Kenya-Uganda border over rustling. Daily Nation, October 3, 2012. <http://www.nation.co.ke/News/-/1056/1523908/-/xtc5qbz/-/index.html>

was further an agreement without aggression signed which gave an environment for water resource and its management was as a sign for peace.⁶⁹

In total, there were at least seven regimes in the Incomati River that were basin-specific. There were also four of them that were non-basin and other one that was a non-aggression pact. This pact had also one of the biggest regime established in the South Africa which did not function at that time due to the hostilities experienced and the struggle for freedom of the south. None the less this pact is fully functioning to this day. This pact understood all the riparian states in the terms of water sharing and the formulae from the Incomati river basin. The Incomati has survived hostilities for regimes in the period of time since 1999.⁷⁰ Another agreement with specifics and bilateral with water agreements and formulae is the Komati Basin Water Authority also known as KOBWA. This pact relied and lives on the Inco Maputo Agreement which was a basin wide arrangement.

3.2.2 Cunene River Basin

Portugal and South Africa had a first ever pact that included the building of the Cunene river basin and this pact were finalized in the year 1926. This pact was in line with the next pact that came to be in the year 1964 and was known as the second agreement use. This two pacts were tied only to Cunene river basin but to some mutual benefits they also involved themselves with different river basins between the South and Portugal. Another pact was reached in the year 1969 between the South and Portugal and this was known as the third agreement use and it created the (PJTC) which means Permanent Joint Technical Commission together with (JOA) which means Joint Operating Authority, these two never started off due to the war eruption. Builders and the

⁶⁹A.K. Biswas, *Management of International Water: Problems and Perspective*. UNESCO, Paris. 2013, 142 pp.

⁷⁰A.C. Vas, & A.L. Pereira, Mohammed AE, 'Joint development and cooperation in international water resources', in Nakayama M (ed.), *International Waters in Southern Africa*. Tokyo: UN University Press, 2003, pp. 209–48;

engineers began the construction of the Caluequee Dam, Ruacana hydropower system and the Cunene–Cuvelai IBT, but all these projects were also interfered with by the war. The developing regimes were delayed during the different wars which occurred in different times in Cunene basin, but immediately the war ended there was a fourth pact signed by both Angola and Namibia in the year 1990 restoring the PJTC pact that was authorized with the accountability of managing, the Epupa Dam the scheme of hydropower and the water supply to the northern part of Namibia.⁷¹

A different pact was agreed between two nations that restored the JOA and it was given the mandate to manage and regulate at Goveé Dam and the Ruacana infrastructure of the hydropower. The pair of Govee included in the ambit of the JOA pact. From this facts, it is clear that almost five government have exited themselves in regard to Cunene basin hence excluding the specifics that were mostly non-basin of them, five exited Four of these (Southern African Regional Commission for the Conservation and Utilization of the Soil (SARCCUS), SADC Founding Protocol (SADC FP), SADC Water Protocol (SADC WP) and SADC pact on Transport, Infrastructures and Meteorology is described in the part on the Incomaati. The Angolian / Namibian pact was reached in the year 1990 and termed as the fifth agreement also known as ANJCC or the Angolan–Namibian Joint Commission of Co-operation. This one came with a big number of instruments and functions and all of them are in the nature of co-operation and one is related to the water management resources.

⁷¹ A. Jenvey, 'Water wars: The water rights question amongst Botswana and Namibia with respect to the Okavango River is set to heighten as Namibia draws nearer to one-sided activity', *New African*, April 1997, pp. 16–17

3.2.3 Limpopo River Basin

The water administration revolution system has been hectic in the Limpopo River basin with 8 specific regimes at least. The regime building of the Incomati and Cunene basins began in the years 1926 and using the number one agreement. Following the same trajectories to these different basin, in 1964 the number two agreement usage was implemented. The m Swaziland and Mozambique called the, Misingir dam treaty evolved from there revers which seem to have a mutual interest. This treaty was signed in the year 1971 hence accepting the building of a downstream of the dam from a park in Mozambique called the Kruger. Among the South Africans, there was a treaty established in the year 1983 called the TPTC the countries which the treaty was established included republic of Swaziland and the state of Mozambique, but Zimbabwe was left out.⁷²

Zimbabwe was omitted due to the fact that it refused to join Southern African States constellation and this was suggested by South Africa as a pact and the pact was to be a non-aggression one and it was only based on the economic development of a specific region. Zimbabwe became aggressive particularly to the South Africa in year 1980, putting pressure on Front-line as they were known, so as to join arms in the fight against colonial powers, the capitalization and the racism they faced, and they establishing the African Coordination of Southern African Conference. An internal war started as a result. After the announcing of intensification of the armed forces, there was a first military attack.

⁷²A.R, Turton, A. Earle, D. Malzbender, and P.J. Ashton, *Hydropolitical vulnerability and resilience along Africa's international waters*. Chapter 3, 2006 in: AT Wolf (Ed.), *Hydropolitical Resilience and Vulnerability along International Waters*. Nairobi: United Nations Environment Program. Report No. UNEP/DEWA. 58 pages.

A car bomb went off in the year 1983 outside the base of the army headquarters and this was as an insult and was like taking war to the Limpopo basin. This was against the political agreement and instructions were not followed since they said not to include Zimbabwe in the TPTC pact. The reason for the fact was to so as they could bring out a better and firm relation between them and the other riparian countries. This was also to offer the best and readily development so as they would not use their armies to join the South African guerilla warfare. And for this reason hence the assignment of NPA in the year 1984, to form a pact that executed peace only in development and the water management resources.

The TPTC could no longer function the way it was supposed to since the exclusion of Zimbabwe and for that there was a negotiation among South Africa and Botswana that was bilateral in the year 1983 hence coming up with the Joint Permanent Technical Committee (JPTC). The establishment of the Limpopo basin permanent technical committee was started and all the four state were the major signatories of the pact. This took effect after the NPA started, this was to make the interstates stable in their relations in that the joint growth of the water resources became feasible. Botswana was going through a water scarcity period in its capital city Gaborone, so the Molatedi Dam had to supply them with water via a pact reached in the year 1988 for a cross border one.

Most scholars and researchers have not notices the pact since it was done when the apartheid rule governed South Africa and its outskirts. The strategic significance of the water resources and the urge to keep Gaborone city secured, the political dilemma felt was overcomes by the government of Botswana with the Bantustan having the pact employed by the department of national water instead of the government department of water. In 1989, the JPTC bilateral pact was upgraded to a different level. The reign revolution ended in the year 2003 when a pact was reached of a basin

wine agreement among all the state riparian's present in the Limpopo watercourse commission (LWC).the TPTC future is well told by the fact that it was a very determining pact. A pact among three countries those were sovereign to rule 3 different rivers basins regime. Their failure could not be escaped because the extended regime was too strong and big. It is therefore shown as a learning curve passed through more than a direct lack of accomplishment and putting in mind a new regime in the river basin would be a catastrophe. The change in regime gives a new evidence for a joint agreement after the failure the pact oof the river basin. However this will show how the pact come to bee and signed. After this the state that exited due to any reason that is political will be allowed back but in a weaker part or position of the pact that it was before its exit. There is a big lesson learned from both the Limpopo basin pact and the dynamics that are mostly hydro politics.⁷³

3.2.4 Okavango River Basin

The Incomati, Cunene and Limpopo basins are noted over the asking of the use of the assenting of the Okavango waterway basin begun in 1926. The second utilize understanding took after this in the year 1964. By this, the contact between the Angolan and the Namibian specialists were facilitated. Since around then Namibia was regulated as an accepted area the latter were the South African nationals. The War of Liberation in Namibia made the making of administration as slowed down from the year 1969 up to 1990, together with the war in Angola that was community, this time the water powered establishment turned into the point of the military powers in the year 1990. The assenting that was marked was reciprocal and it was amongst Botswana and Namibia which set up the Commission for Joint Permanent Water (JPWC) for the Okavango and the Chobe–Linyanti–Zambezi administration.

⁷³B. Bii, Tension at Kenya-Uganda border over rustling. Daily Nation, October 3, 2012. <http://www.nation.co.ke/News/-/1056/1523908/-/xtc5qbz/-/index.html>

This is among the few stream administration decides that have groundwater administration as its segment. As threats retreated, an understanding that was two-sided and which come to between the nation of Angola and republic of Namibia, underwriting the Third Water Use Agreement come to linking the previous provinces in 1969, making the PJTC settlement. Towards the end of the Cold War, the political procedures begun to resemble a typical schedule, and South Africa gave Namibia its independence. The move prompted the lasting development of the Okavango River Basin Water Commission (OKACOM) in the year 1994. This happen immediately after Namibia gained its independent hence the discovering by Gleditsch stating that the lack of water has a long term substantial in the development of liquid water management that will help in avoiding of any conflict that may arise. This also happened when Namibia was investigated by the ICC and were waiting for a verdict and this made the issue settled in a peaceful way.⁷⁴

3.2.5 Orange River Basin

The basin of The Orang River initiative is viewed in six different main issues that are strategic. A reliance of high resources relates in Namibia and South Africa. There is another reliance of complexity and association with the allocation that is far from the sector of agricultural to that of service and industry sector. The third issue is based on the clean water deterioration superiority, this is in collaboration with governing a closed river basin where the base flow for many years of famine and this is influenced largely by the flow that return and the contamination that comes from the acidic mining substances and their drainage. Good neighbor relations that have been established in South Africa national water act which stipulate an equal and average amount of water flow among the regions and this act must be practiced. The act as a unique one around the

⁷⁴CSIR, An Assessment of the Potential Downstream Impacts in Namibia and Botswana of the Okavango River–Grootfontein Pipeline Link toward the Eastern National Water Carrier in Namibia: Initial Environmental Evaluation Report, contract answer to water exchange experts, Windhoek, Namibia by Division of Water, Environment and Forestry Technology, CSIR report no. ENV/P/C 97120. Pretoria: CSIR, 1997.

globe since it gives the environment the right and regulations to share. The main reason for this issue is to give the aspect of the resource balancing and its protection. The other relations is to the inter basin exchange; this is a pivotal state system of the Orange River. Finally, the border is formed by the Orange River between Namibia and South Africa. This border position has been conflicted in the past One (1) century, making the basin the best case for a study empirically for how the managers of water resources deal with the right and conflicts on the right of ownership, hence changing it to a pressing condition during dry seasons.

Regarding the beginning of the regime, the history of the basin starts in year 1948 with SARCCUS. The Sharpeville massacre was responded by the first ever transfer of a major basin transferring clean water from the Orange River, through the River of Fish and into Sundays River. This was the beginning and marked a very important occasion of the South African hydraulic mission which was also aggressive too. This created the notion that water security was very important for a future in the economic growth and the stability in political world. In the year 1978, the committee for joint technical brought forth to check in the feasibility of LHWP which came later. This led to the agreement in the year 1986 and finally signing of the same treaty, this later created JPTC, the Lesotho Highlands Development Authority (LHDA) alongside the great Trans Caledon Tunnel Authority (TCTA). Different new assentions were marked, each partner with particular issues to handle at once as they emerged, amid the different advancements of the LHWP arrangement. Some of these points are forgotten from the examination for curtness. In the year 1999, JPTC settlement was reinforced to the Lesotho Highlands Clearwater Commission (LHWC).

The entire SADC region, the Orange River basin is the most stable internationally. It has the most strategically well-organized structures and the most underlying agreement that have

developed to perfection over the years. They have also shown an evolved complexion to the state that they have become like an example to follow by the other river basin. The Orange River basin facts gives the ideal clues in the provision of the SAHPC, due to the acts of the country of Botswana which include the linking of Orange River issues to the Zambezi.⁷⁵

3.2.6 Zambezi River Basin

In the 1980s, there were donors that were considered having an interest in the basins, this led to the interest of coming up with a committee for the wide basin. An agreement was signed between the states after they were given the plan of the Zambezi basin formally known as the Zambezi Action Plan (ZACPLAN). But all of this was a plan driven only by donors. One of the recommended outcomes of the plan and in fact a positive objective was the drafting of the SADC WP, this was necessary as the riparian states felt it would support the plan of the Zambezi when it was launched. Agreement was reached for the signing of the mega plan and in the year 2004 the signing was a done deal that was witnessed by seven riparian states in the city of Kasane in the country of Botswana.⁷⁶ The 8th riparian country has also committed itself to the treaty but it requested for additional time to consult. The agreement will indeed starts its full function when the 3rd of its members bring the motion to their parliament and the bill sails through. But until the bill is passed, the act of surrogate basin treaty will apply on SADC WP. Furthermore, there are some of the commands that foster union among the states that are outside the SADC WP and SADC TCM.

The ANJCC likewise help with the union between the legislatures of the Angolan individuals and that if the Namibian in the water assets administration. The Joint Commission of Co-

⁷⁵E. Delbourg, and E. Strobl, *Cooperation and conflict between upstream and downstream countries in African transboundary rivers*. Paris: Ecole Polytechnique, 2012. Available at: <http://www.feem-web.it/ess/ess12/files/papers/delbourg.pdf>

⁷⁶J. Mendelsohn, & S. el Obeid, *Okavango River: The Flow of a Lifeline*. Cape Town: Struik, 2004.

operation (JCC) that was established among the nations of Malawi and Tanzania The Joint Commission of Co-operation (JCC) linking the nations of Malawi and Zambia, the Permanent Joint Commission of Co-operation (PJCC) between the republic of Malawi and the nation of Mozambique, the JPWC settlement between the Botswana and Namibia and the PJTC agreement between the two nations of Angola and republic of Namibia all demonstration similarly, by bringing these commission from various states and a same gathering in that they will effortlessly go to a concurrence with the law of Pike in the brain.⁷⁷ After The NPA rejuvenated the Cabora Bassa extend, it assumed an extremely critical part in weeks for the South Africa-Mozambique assenting that had no forceful settlement at all.

The parallel national activity is now and again utilized because of the nearness of numerous assertions that are respective which is a way to deal with provincial integration, as clarified by Nielsson and Heyns in the content water assets administration. The Zambezi waterway basin is extraordinary in perspective that is interacting and identifying with the part of the SAHPC.⁷⁸ The three riparian's of Zambezi have a matter that is so squeezing in the reality of securing the waters from the Zambezi later on yet there are distinctive and fragile difficulty between each other the nation of Zimbabwe has a noteworthy requirement for water to bolster its populace. In any case, the valley in Zimbabwe is so steep subsequently making it hard and exorbitant to pump water thus prompting the administration denying the procedure. This makes it one of the many explanation behind the recommending of the Batoka Gorge Dam. By lessening the cost of pumping and power this dam is utilized to supply the populace. Given the financial condition of Zimbabwe in the year 2009, the nation does not bolster the arrangement since the legislature can't get enough cash required for the venture. There is an affirmed assurance of supply in

⁷⁷J. Mendelsohn, & S. el Obeid, *Okavango River: The Flow of a Lifeline*. Cape Town: Struik, 2004.

⁷⁸J.W. Turne, *Continent Ablaze: The Insurgency Wars in Africa, 1960 to the Present*. Johannesburg: Jonathan Ball, 1998.

Windhoek territory of Namibia. This is the motivation behind why Namibia needs to assemble a pipeline from the stream of Okavango.

The Zambezi waterway basin comprises of a solitary reciprocal administration, with a concession to the basin that was propelled as ZAMCOM. This commission is absent formally, despite the fact that there has as of now been an arrangement marking among seven riparian's which is sitting tight for sanction prepare that will soon be presented. This is among the results of working with the ZACPLAN. The pay that is occurring because of the absence of the administration in view of the basin, the most astounding number being ten of them all is at hazard. Since it was known as a basin at hazard by virtual, the nonattendance of the basin and crisp water stream basin can be viewed as surrogate administration and this is because of the presence of the SADC WP and this gave a vital and a legitimate structure.⁷⁹

Besides the Zambezi basin recorded the biggest number of particular administrations without basins and initially this gives an exact proof for a tranquil determination in the terms of recourses to the ICJ. The pattern ought to be viewed as to conflicting with the world standard, with an association that is immediate and must honey bee seen between the quantity of riparian nations and a multilateral administration through and through. Few World Rivers with riparian state has gone to a concurrence with a working administration that incorporates a more extensive basin in that if there is no establishment representing that the basin won't be subjected to be at hazard. Despite what might be expected, since the talking and settling appear to take a more extended time, it has been recommended that the riparian nations have without a doubt taken the matter as a major issue and the procedure is been dealt with definitely to the detail, there is an

⁷⁹L. Ohlsson, The role of water and the origins of conflict. In: (L. Ohlsson, Ed.), *Hydropolitics: Conflicts Over Water as a Development Constraint*. Zed Books, London, 2005, 236 pp.

understanding that propose the way that SADC WP was produced from the ZACPLAN consultations.⁸⁰

3.3 Conclusion

The Southern African region faces excellent issues concerning freshwater resources both to the degree openness, and as for spatial and accidental varieties. The resolute expansion in the amount of inhabitants in the nations of the SADC region, joined with the improvement in urbanization, will keep adding more weight to the fighting requests on the limited accessible water resources. This circumstance is in addition convoluted by the monstrous number of shared streams in the SADC Region. Under these conditions, it is not stunning that the nations of the SADC have put the use and assurance of, and the more prominent issue of enthusiasm over, shared channels on top of their course of action, The stamping and passage into drive of the 1995 Protocol was plainly an essential stroll towards composed exertion among the SADC nations in the sharing and association of their standard water resources.

The adjustment and animating of the 1995 Protocol to interlace late movements in this field and to make the diversion arrangements of the Protocol, things being what they are, persevering with the UN Convention is another basic change since it alters the Revised Protocol to all around perceived gages in the field of shared courses. The arrangements of the Revised Protocol that oblige the part states to apply without change the Revised Protocol to future assertions is an admirable deviation from the UN Convention. It is magnificent in light of the way that it passes on quality and consistency to the region's conduits understandings. The nearby strategy for the

⁸⁰L. Ramberg, 'A pipeline from the Okavango River?', *Ambio*, 26, 2, 1997, p. 129; *Weekly Mail and Guardian*, 'Plan could swing Okavango to tidy', 29 November 1996a; *Weekly Mail and Guardian*, 'Namibia practically sure to deplete Okavango', 6 December 1996b.

Protocol and the portrayed float of the conduits which it should cover require more confirmation, while the general technique for the UN Convention requires more unmistakable adaptability.

Furthermore, the union of arrangements on course in the Revised Protocol and extending shot obviously to all the riparian conditions of the channel on a correlative initiate is another dynamic, commendable progress; especially since one piece of the landscape individuals from SADC are landlocked states to whom these rights are basic. The sharp arrangements among the SADC nations in their size, individuals, financial massiveness, crisp water resources accessibility, institutional cutoff, and besides downstream, upstream zones may make strains among some SADC nations about the prospects for vital participation in the extent of shred water resources. Additionally, the feasibly existing request, and in like manner the potential ones, may endure for quite a while.

Regardless, the present positive movements in the region, for example, the tranquil affirmation of the disagreement about the Kasikili/Sedudu Island among Namibia and Botswana, and the lovely condition that prompted the total of the Revised Protocol ought to simplicity such burdens, and ought to help with settling existing and potential question. Such positive changes ought to in like way help with making shared water resources an impetus for collaboration, rather than a source 'of debate. Making the key strides for executing the game-plans of the Revised Protocol after it goes into compel and keeping up the charming soul made by the total of the Revised Protocol will without a doubt be the going with test for the nations of the SADC Region. In fact it will be the true blue test since it addresses the most critical and exceptional asset in the SADC district.

CHAPTER FOUR: A CRITICAL ANALYSIS OF THE EFFECTIVENESS OF SADC WATER MANAGEMENT INITIATIVES IN PREVENTING CONFLICTS

4.0 Introduction

The aim of this chapter is the analysis of conflicts prevention in Africa through effective water management by focusing on SADC. Examining water issues has an unmistakable linkage to human security and improvement. The accessibility of water in amount, the debasement of water quality and the earth without a doubt add to the exacerbation of social strains, and can possibly add to clashes in Africa and around the world. Still, numerous current reviews demonstrate that these "water wars" have a tendency to happen just when conjugated with different factors of erosion, at the intra and between state levels.

Accomplishing water-related Millennium Development Goals (MDGs) specifically impacts on the achievement of a few different MDGs, for example, those on neediness mitigation, wellbeing, craving, instruction and sexual orientation balance. Giving water supply and sanitation administrations affects youngsters' wellbeing and school participation, and frees lady from "providing food" solely towards family unit water needs. These give imperative financial and social advantages for society. Great water administrations present many advantages, in actuality, the expenses of lacking arrangement of water supply and sanitation administrations can be huge, as far as lost open doors and antagonistic effects on financial and social improvement, and natural maintainability.

The information accumulation techniques included optional information acquired from the distributed and unpublished books and venture reports, magazines, and diaries on strife counteractive action, water administration, water assets, both physical and hydrological areas of

the chose shared streams, assertions now in operation and foundations set up for chose global waterway basins, water assets advancements and additionally sectoral water utilization. Other related reports will be looked into with respect to the SADC Protocol on Shared Watercourses which was gotten 1995 and updated 2000. The SADC Regional Water Policy (RWP) of 2005 was conveyed to help the usage of the Protocol. A Regional Water Strategy (RWS) of 2006 was made to give the structure to the use of the Protocol and the Policy. Close-by Strategic Action Plan on Integrated Water Resources Development and Management (RSAP 1998). The Regional Groundwater Management Program (GMP 1998).⁸¹

4.1 Inter-State Water Cooperation in Southern Africa

Numerous onlookers respect exhibit day Southern Africa to be at a propelled phase of between state collaboration in water assets administration. This is because of a mix of components conceivably one of a kind to the locale. In West/Central Africa, the finish of the Cold War conveyed sensational and game changing closures to patrimonial frameworks of administer, setting off delayed times of intra-state and local vicious clash. Interestingly, Eastern and Southern African states moved generally rapidly and calmly toward liberal majority rule types of run the show. These frameworks of administration are at different phases of union, while states, for example, Swaziland and Zimbabwe appear to be dormant (on account of the previous) or breaking faith (the last mentioned). The finish of the Cold War additionally encouraged the finish of race-based minority administer in Namibia and South Africa, and in addition South African-supported common wars in Mozambique and Angola. Namibia and South Africa are

⁸¹J.E. Cobbing, 'A basic neglect of trans boundary aquifers that are shared by Southern Africa', *Hydrogeology Journal*, <http://www.springerlink.com/content/00w5272x7704356q/>.

centered on conquering intense formative overabundances in their social orders. Mozambique and Angola are centered on revamping war-assaulted economies.

At a world class level, then, there is a lot of solidarity produced in the long battles against expansionism, colonialism, politically endorsed, racial isolation, and politically endorsed racial isolation supported local destabilization. At an institutional level this is symbolized by the change of the counter politically-sanctioned racial segregation arranged Southern African Development Coordination Conference (SADCC) made in 1980, into the Southern African Development Community (SADC) in 1994. In useful terms, SADC states have collaborated at many levels, from dry season and surge help to facilitating displaced people, giving forward bases to freedom developments, and military intercessions (to reestablish majority rules system in Lesotho; in support of the officeholder leader of the Democratic Republic of the Congo against an assortment of revolt and unfriendly state invasions).

Reactions of these activities aside, obviously SADC state pioneers view themselves as a club of similar people (wherein the participation progression are vigorously gendered and weighed down with age and military, political, financial and social power orders). While many appropriately address the solid accomplishments of these associations, one ought not to disparage the essential propensities for participation and profound collusions especially at top levels of government that have shaped through time.⁸²

With respect to water assets, SADC states have introduced normal positions – symbolized by the provincial 'Water Vision' – in an assortment of global discussions: African Union, G77, EU-ACP, World Water Forums, and the world summits at Rio and Johannesburg. SADC's different local conventions – e.g. on tourism, on exchange, on vitality, on shared conduits – a large

⁸²K. Bernstein, & T. Strasbourg, *the Southern Africa Frontline*. London: C. Heilm, 1988; Turton AR, 2004, *op. cit.*; Turton AR.

number of which are legitimately official, its modified bureaucratic hardware, and new arrangement rules (particularly with respect to the harmonization of strategy, laws and administrative systems crosswise over part states) are viewed by givers as basic for long haul provincial financial development and supportable advancement. The association itself puts awesome stock in exercises identified with shared waterway improvement and administration. As verbalized in the Regional Indicative Strategic Development Plan (RISDP), SADC sees between state collaboration on water assets advancement and administration as an essential segment in helping the district 'connect the framework crevice' and a methods toward the general objective of neediness destruction.

As stated above, many international actors are operative in the African physical setting, so turning local geographic spaces into arenas of international politics. African state actions are scrutinized by donors and circumscribed by a variety of political and economic conditionalities. Activities fostering regional cooperation/integration are privileged by all donors who view such activities as having peace-building and economic development potential. SADC state actors are not merely policy-takers; they are actively pushing state-specific and collective agendas, raising capital for water-related development projects, and shaping the content of global discourses of water management to fit local realities. The latter manifests most recently as SADC state actor attempts to shift global discussions regarding IWRM toward regional realities: IWRDM where 'D' is development – unlike Western states, SADC policy makers are keen to continue with what Allan describes as 'the hydraulic mission'.

The end result of these actions in the SADC region has been the signing into law of a variety of protocols on shared watercourses, trade, telecommunications, energy, tourism to name several. There has also been a steady push toward establishing commissions in all fifteen shared stream

basins in the region. The Southern African water sharing framework depends on the understanding that two center components are constantly significant. Right off the bat that all waterway basins are not equivalent and besides that every single riparian state are not equivalent. Considering these two focal presumptions, a refinement between two unique sorts of riparian states, essential and affected states, and two classes of universal stream basins (urgent and affected basins) can be reasoned⁸³

4.2 Effectiveness of Policies/Agreements in Preventing Conflicts over Shared Water Resources

The second objective of the study was to assess the effectiveness of policies or agreements in preventing conflicts over shared water resources with a focus on SADC. The picture that rises up out of the writing checked on is that of a locale in which water is a generally rare asset. This is expected not exclusively to the dry climatic conditions portrayed by whimsical precipitation examples and high dissipation rates yet this shortage has all the earmarks of being likewise "socially" incited. To be sure not just have pioneer powers constrained expansive parts of the populace to move onto peripheral grounds however have likewise settled an isolated water supply framework.⁸⁴ This legacy halfway survives today. Actually, numerous urban focuses in the Southern African district are remotely situated from wellsprings of water making the vehicle of water through pipelines or inter-basin exchanges a compulsory decision. To make matters much more confounded is another unintended outcome of pilgrim run the show. Without a doubt provincial powers fundamentally utilized streams to differentiate worldwide outskirts between

⁸³L.A. Swatuk, 'The State and Water Resources Development through the Lens of History: A South African Case Study', *Water Alternatives*, 2010, Vol. 3 No. 3: 521-536.

⁸⁴N. Mirumachi, 'Domestic issues in developing international waters in Lesotho: Ensuring water security amidst political instability', in Pachova NI, Nakayama M & L Jansky (eds), *International Water Security: Domestic Threats and Opportunities*. Tokyo: UN University Press, 2008, pp. 35–60.

nations. This implies the majority of the waterways of the SADC locale are global streams and must be shared between at least two nations at once.

Obviously this circumstance offers a lot of motivations to start a significant level of rivalry between states in their endeavor to secure the measure of water important to fulfill their necessities. Approaching water shortage and expanding modern advancement may strengthen this opposition between states if water utilize is not composed at a territorial level. The water issue might be lifted by single states to the level of a national security issue expanding the danger of contention. The disturbing forecasts, for example, those that express that South Africa's water supply won't have the capacity to take care of demand by 2030 and that specific nations of the district are as of now water pushed, are vital pointers of an unsustainable routine with regards to water administration. Water arrangements acquired from the past and focused on the working of huge dams and securing water through inter basin exchange plans not just affect the waterway biological community additionally give off an impression of being a short-term answer for the issue of water shortage.⁸⁵

In spite of the noteworthy advance made up until this point, there are a few vital difficulties that require additionally work. The water shortage wild in a few sections of the area and contending formative necessities between part states may bring about debate and strain over water. Different difficulties emerge from an assortment of truths including the way that precipitation in the SADC locale is very factor, with the subsequent effect on unwavering quality and catastrophe related with dry seasons; the accessible water assets are unevenly dispersed over the district and water accessibility and request are not coordinated.

⁸⁵ M.J. Tumbare, 'A strategic action plan for the sustainable development of the water resources of the Zambezi River basin', paper presented at the Second Southern Africa Water and Wastewater Conference, Harare, 15–18 September 1997

However, another test exudes from the way that there is broad destitution in the district, with many individuals not approaching satisfactory water for essential human needs particularly residential and family purposes and water for profitable utilize. The low levels of access to safe drinking water and sufficient sanitation antagonistically affect the occupations, wellbeing and efficiency of the poorest and most defenseless individuals from society. Among the key issues that make it hard to furnish individuals with water in the district is the awkward arranging of human settlements. A generous number of the tenants live in the provincial territories in the semi-parched south and southwest of the locale, overwhelmed by transient streams, which depend on groundwater.⁸⁶

Migrating the general population is regularly met with resistance and shame. There is likewise a general connection to familial land and also unwillingness to surrender places with graves and noteworthy social destinations among SADC people group. A decent a valid example includes the Topnaar people group roosted along the Kuiseb River amidst the Namib Desert who confront intense water shortage, yet they oppose migration.⁸⁷ The water foundation is unevenly created over the locale so that there is unequal designation of water among divisions with a few parts like the urban ranges being in an ideal situation than provincial territories. Disparity is likewise found inside specific parts, for example, urban zones where up market zones are preferable provided food for over casual settlements. The worldwide situation is that the water foundation is for the most part deficient and regularly not adequately worked and kept up, so it can't meet the developing requests for advancement and administrations.

More difficulties emerge from insufficient and conflicting water assets data administration among the individual states so that there are related issues for collaboration and arranging in

⁸⁶P. Townsend, *Poverty in the United Kingdom. A survey of household resources and standards of living.* Harmondsworth, Penguin Books, 1979.

⁸⁷N.P. Gleditsch, *Conflicts over Shared Rivers: Resource Scarcity or Fuzzy Boundaries?* Oslo: International Peace Research Institute, 2005.

shared waterways. Thus there is extensive variety of legitimate, approach and administrative systems inside the Member States making it hard to set up linkages amid requirement at both national and territorial levels, posturing challenges for reliable usage of local activities. Frail linkages between various divisions and powerless data stream and insufficient institutional limit emerging from low levels of mindfulness, instruction and preparing hamper far reaching and incorporated advancement. Constrained or absence of valuation for the limited nature and monetary estimation of water by a few segments of the populace and restricted mindfulness and additionally absence of successful partner support and association in basic leadership at a nearby, national and local levels, especially ladies, the adolescent, the crippled and the poor remain an awesome test to tending to water shortage issues in the area.⁸⁸

Some of the time notable contemplations of power by part states tend to point of confinement combination both for the improvement and administration of water assets and all the more comprehensively for financial mix. Likewise there is no generally acknowledged standard equation to appraise the estimation of water in the area, specific among Watercourse States. This makes it troublesome for such Watercourse States to take part in transaction on sharing the asset, since agreement on the estimation of the assets is hard to accomplish. Absence of energy about the monetary estimation of water and to a great extent mutual responsibility for asset in provincial regions adversely affect the exertion and sense of duty regarding better dispense and deal with the asset for ideal advantages both as a financial and social great.

Striking a harmony between financial, social and ecological water assets distribution remains a test, because of the discernment that productivity is accomplished if need is given to business monetary employments. Firmly identified with this test are the inborn vast wasteful aspects of

⁸⁸O. Mkone, 'Water wars: The Okavango is already drying up and if more water is drained off, it is not just tourism that could be affected', *New African*, April 1997, p. 18;

water transport and use in all nations in the district. Wasteful water utilize is not just unsustainable under a circumstance of water shortage, additionally forces huge expenses on the economies of the district. Along these lines a test to water administration area is to characterize and set up measures that will enhance water utilize proficiency over the locale.

There is a general lack of human and also money related assets to completely meet the benchmarks laid out in the territorial and national water strategies and laws which is an oblige in the powerful handy usage and requirement of convention and arrangement set around the provincial body. While the applicable laws and administrative systems are set up, dependable establishments are not sufficiently kept an eye on. This calls for interests in limit working at the different water administration levels including at the formal water administration organizations (national governments) and also inside common society and group levels. This is a long haul challenge which has been perceived and incorporated into the local Water Policy archive.⁸⁹

Regardless, SADC states seem, by all accounts, to be completely mindful of the circumstance and conceivable result and have in this way left in a progression of endeavors going for advancing territorial collaboration in the water segment. The coming full circle purpose of these endeavors has be the mark of the Protocol on Shared Watercourse Systems. One could consequently nearly presume that this circumstance of asset shortage instead of activating clash between states has been a solid help to local participation between SADC states. A practice that, at any rate for what concerns this locale, nearly appears conversely with those theory that attest that the following wars will be water wars.

Additionally, these contemplations are at the base of the need, felt by a large portion of the SADC states to address this asset shortage with another approach. Lessening water assets and the

⁸⁹P. Townsend, *Poverty in the United Kingdom. A survey of household resources and standards of living*. Harmondsworth, Penguin Books, 1979.

goals forced by expanding industrialization and financial improvement are the central drivers behind the endeavor made by SADC states to oversee water assets in a more supportable way. This is reflected, as effectively expressed, in the marking of the Protocol on Shared Watercourse Systems that goes for advancing a fair utilization of water at territorial level, or in the national water changes received by a few SADC states that go for tending to the unevenness in the water dispersion inside the national domain. Every one of these changes are correlative to the reception of the standards expressed by Integrated Water Resource Management (IWRM) which has viably turned into: "... a mantra or religious content, an arrangement of unchallenged suspicions and declarations about how water assets ought to be created and overseen." IWRM is an arrangement of rules that go for orientating states towards a supportable, water request administration. At the focal point of IWRM is the mindfulness that issues concerning transboundary assets can't be managed a nation-state attitude however require of a comprehensive approach that rises above national limits.⁹⁰

The rising water design in the Southern African area, which, in the expressions of Swatuk "... endeavors to tie a mutual vision in view of value, manageability and proficiency to an arrangement of conveyance in light of partner inclusion," is for sure angles consistent with this new belief system yet for others, it appears to negate it. For instance, from an institutional perspective, the catchment itself is to be the unit of social association and asset administration and as a result, the catchment boards have turned into the new administration units of this scarce asset. Every catchment has a director which is in charge of drawing together a catchment administration arrange in collaboration with the gathering.

⁹⁰P. Townsend, Poverty in the United Kingdom. A survey of household resources and standards of living. Harmondsworth, Penguin Books, 1979.

This will contain insights concerning issues, for example, water allotments, the measure of water important to keep up the natural respectability, the principle issues influencing water quality. The whole structure is then directed by the National Water Authority. Regardless of the way that it is trusted that these committees will increase genuine decision-making power, they are to be self-financing. In this manner, there is by all accounts conflicting powers at work. On one hand, the whole water segment would like to move towards a more attractive and fairer arrangement of assignment. On the other, the chambers and the water area as a rule are to act naturally financing. This suggests they will have a clear enthusiasm for advancing the offer of water for business utilize. Hence as opposed to offering need to issues, for example, condition maintainability and the general population's water rights, the boards will wind up favoring those that can pay for water.

This inclination toward the privatization of water is additionally show in the reception of a water request administration (WDM) approach or the affirmation that the way to expanding the accessibility of a scarce asset is not in enlarging supply but rather in lessening request. At the focal point of WDM is an estimating approach. Water must be viewed as a financial decent and SADC states feel it ought not to be underpriced. This general inclination towards the privatization of water joins an expanded association of the private segment in both supply orientated and demand orientated exercises. Under the recipe of 'Public Private Organizations' SADC governments have in actuality progressively returned to private firms for the development of water conveyance frameworks. The Lesotho Highlands water extend, the Pungwe-Mutare pipeline extend in Zimbabwe and the Namibian National Eastern Water Carrier are only a couple of cases. This inclination towards privatization is a bit much conversely with the announced goal of a reasonable and evenhanded usage of water assets. It seems clear that for this situation the

private part is only mediating in a region where the state has neglected to give residents essential administrations (for reasons identified with auxiliary modification programs, national obligation, and endless spending deficiencies).

Private firms for this situation are or ought to be instruments that empower states to accomplish particular destinations, for example, maintainability, and advancement of water utilize, condition honesty. They ought to along these lines be a piece of a considerably bigger and exhaustive arrangement beforehand created by the state and that ought to relate to the country's advantages. In different terms, privately owned businesses need to work as indicated by criteria which go past the simple quest for profit under an unmistakable government vital system. Normally, for this to happen, it is basic that the exercises of the private area are nearly checked by the state. Just through the harmonization of the private division's also, the administration's advantages can SADC states build up an ecologically solid and feasible water administration strategy.

Irrefutably, the marking of the Protocol on Shared Watercourse Systems speaks to, in spite of its confinements, a turning point of territorial participation in the use of transboundary waters but, there are as yet critical snags to overcome. The most critical of these is the need to acknowledge a redefinition of the idea of state power. In spite of the talk on local collaboration and fair offer of transboundary water assets, SADC states still take after a "nation-state attitude" in this way securing water to the detriment of different states. These flow developed plainly while dissecting the transaction forms in the Incomati and Orange stream basins. Surely, an unsustainable administration approach of transboundary water has in reality created an extreme rivalry over these assets and has put country states under solid weight. Without a lawful structure and provincial foundations ready to facilitate water use all through the area, countries states will have no option however to proceed with this "first start things out served" strategy.

To make the circumstance much more confounded and conflicted is the way that water has a "long history of politicization" in the locale as streams were utilized by pioneer forces to separate worldwide limits between nations. This expands the potential for struggle and division in the area as fringes outlined by streams may be, 'fluffy'. Regularly, the limit takes after the Thalweg or the most profound direct in the stream however this is by all account not the only probability. For artful reasons, states could accordingly support two diverse lawful standards for deciding the position of the limit. The outcome is that these states sharing a lot of waterway limit may not battle about the immediate control of the asset, yet rather over the political limit.

In this circumstance, one conceivable path forward is to expand straightforwardness and data trade. The goal is two-fold: from one perspective sharing data in regards to water quality, natural state, meteorological state of the stream basin upholds a basin state's effectiveness and ability in the administration of shared conduits. Then again, straightforwardness educates downstream conditions of upstream advancements in this way specifically adding to building certainty and trust at local level. In spite of data trade is supported by the Protocol on Shared Watercourse Systems (article 2), the idea of straightforwardness is not yet a merged practice. This circumstance is especially apparent in the discourses that ought to prompt the formation of the Zambezi stream commission (ZAMCOM). Truly, waterway basin commissions were made just out of priests from the water divisions, yet ZAMCOM should begin another course in stream basin establishments. For sure it should be multidisciplinary acquiring authorities from different services and additionally other non-administrative partners. In spite of the endeavors made to include different players, up till now the pastors of the water offices have been exceptionally shrouded about their exercises. At the transactions going for building up ZAMCOM, just the pastors of the water divisions of the different nations included taken an interest with for all

intents and purposes no contribution from different priests a section from those managing legitimate issues and there has been no non-administrative portrayal.

What is in this way required, as opposed to a radical institutional change, is a significant change of "attitude" and of the behavioral sets of principles of existing states. In reality the Protocol on Shared Watercourse Systems just makes the edge, an arrangement of rules for an impartial and economical administration of water assets, yet, as has as of now been noticed, these standards are not at all required or authoritative. Just if SADC states stop to see provincial associations as a risk for their sway will they figure out how to viably advance a practical local water arrangement. In light of this examination, this review acknowledges the theory that; Effective water administration can be utilized as a measure of contention avoidance and Political will of states upgrades water administration.

4.3 Conclusion

In the SADC locale accordingly terms, for example, 'territorial participation', 'practical improvement' and "equity" are progressively mainstream and seem to command the strategic dialect of the area. This is intelligent of another mindfulness that territorial water assets can't be overseen adequately at a national level. To be sure various understandings have been marked in the course of the most recent couple of years for the sake of the guideline of "value" and 'manageable advancement', the Protocol on Shared Water courses being the most critical, and a few SADC states have changed their National Water Acts to adjust them to the standards of IWRM. In the event that this without a doubt speaks to a noteworthy "push ahead" from the politically-sanctioned racial segregation period, it is likewise clear that while these ideas of

provincial participation and maintainable improvement are all around acknowledged in the political phrasing they don't appear to have up 'til now, a pragmatic application. The idea of territorial collaboration is consequently still extremely youthful is as yet not entrenched in state rehearse. Accordingly national intrigue keeps on assuming a transcendent part in the administration of water assets where each state, endeavors to "secure" however much water as could be expected through the working of dams or the reception of complex inter-basin transfer plans.

The trouble in accomplishing provincial collaboration is likewise the consequence of an uneven local power appropriation. Undoubtedly South Africa has a tendency to rule the district just like the most created economy. This has brought about the other SADC states being intensely subject to South Africa. This obviously represents South Africa's more grounded legally binding force in the conciliatory transactions on the administration of global water assets. A considerable change in attitude needs to happen if SADC states truly need to embrace the street of territorial incorporation and reasonable advancement. In spite of all the discussion on correspondence and safe access to water assets, SADC state are as yet separated by proportional doubts and competitions. Regardless of whether these have been acquired from the past or are the aftereffect of a lacking water administration approach, territorial mix initially needs to go through the re-building of a slant of trust. Essentially, this certainty building procedure must be advanced by South Africa, the wealthiest nation of the African mainland, the special case that can drive this mix procedure. South Africa needs to comprehend that it later on it will have the capacity to sufficiently secure water just in the event that it works inside a provincial system of advancement of water assets.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter presents summary of the findings, conclusions based on the findings and recommendations on preventing conflict in Africa through effective water management in the SADC region.

5.2. Summary of the findings

According to the findings on the Challenges Faced by States over Trans boundary Water Shared Resources in the SADC the study established that many international actors are operative in the African physical setting, so turning local geographic spaces into arenas of international politics. African state actions are scrutinized by donors and circumscribed by a variety of political and economic conditionalities. Activities fostering regional cooperation/integration are privileged by all donors who view such activities as having peace-building and economic development potential. SADC state actors are not merely policy-takers; they are actively pushing state-specific and collective agendas, raising capital for water-related development projects, and shaping the content of global discourses of water management to fit local realities. The latter manifests most recently as SADC state actor attempts to shift global discussions regarding IWRM toward regional realities: IWRDM where 'D' is development – unlike Western states, SADC policy makers are keen to continue with what Allan describes as 'the hydraulic mission'.

The study further established that one of the unintended outcomes of pioneer heritage is the production of an extensive number of global waterways in the Southern African area. Pioneer controls actually, utilized these streams to outline universal fringes between nations. Therefore, of the 63 worldwide waterway basins found in Africa, 22 are found in the Southern African area

alone and the limits of the 12 SADC states lie on 15 noteworthy universal stream frameworks. This suggests each of these waterway frameworks must be shared between at least two states at once. An intricate arrangement of linkages and interdependencies between the conditions of the SADC district is in this manner built up as none of these countries can assert sovereign control over these water assets. For instance, the four most financially created nations in Southern Africa -the Republic of South Africa, Botswana, Zimbabwe and Namibia- share two noteworthy worldwide stream basins: the Orange and Limpopo alongside various different basins with co-riparian states.

Unmistakably, the vital significance of a global stream basin to a riparian state relies on upon various elements, for example, the level of monetary advancement that every basin bolsters or the accessibility of option water assets that each riparian state approaches. For instance, the four most financially created states in the district are likewise the most water pushed. The raising water shortage in these nations will consequently later on speak to a noteworthy limitation to these nations' potential financial development and improvement. The circumstance is much all the more disturbing within the sight of basins that are achieving the purpose of conclusion. A shut basin is one who's all accessible water has been apportioned to some gainful movement and no "excess" water is accessible for allotment to new water uses, for example, the Limpopo basin. This prompts another thought: riparian states are not equivalent, as some are more dependent on a given stream basin for their future monetary security than others.

With regard to effectiveness of Policies/Agreements in Preventing Conflicts over Shared Water Resources the study established that the water shortage wild in a few sections of the area and contending formative necessities between part states may bring about debate and strain over water. Different difficulties emerge from an assortment of truths including the way that

precipitation in the SADC locale is very factor, with the subsequent effect on unwavering quality and catastrophe related with dry seasons; the accessible water assets are unevenly dispersed over the district and water accessibility and request are not coordinated.

However another test exudes from the way that there is broad destitution in the district, with many individuals not approaching satisfactory water for essential human needs particularly residential and family purposes and water for profitable utilize. The low levels of access to safe drinking water and sufficient sanitation antagonistically affect the occupations, wellbeing and efficiency of the poorest and most defenseless individuals from society. Among the key issues that make it hard to furnish individuals with water in the district is the awkward arranging of human settlements. A generous number of the tenants live in the provincial territories in the semi-parched south and southwest of the locale, overwhelmed by transient streams, which depend on groundwater. Migrating the general population is regularly met with resistance and shame. There is likewise a general connection to familial land and also unwillingness to surrender places with graves and noteworthy social destinations among SADC people group. A decent a valid example includes the Topnaar people group roosted along the Kuiseb River amidst the Namib Desert who confront intense water shortage, yet they oppose migration.

The water foundation is unevenly created over the locale so that there is unequal designation of water among divisions with a few parts like the urban ranges being in an ideal situation than provincial territories. Disparity is likewise found inside specific parts, for example, urban zones where up market zones are preferable provided food for over casual settlements. The worldwide situation is that the water foundation is for the most part deficient and regularly not adequately worked and kept up, so it can't meet the developing requests for advancement and administrations.

More difficulties emerge from insufficient and conflicting water assets data administration among the individual states so that there are related issues for collaboration and arranging in shared waterways. Thus there is extensive variety of legitimate, approach and administrative systems inside the Member States making it hard to set up linkages amid requirement at both national and territorial levels, posturing challenges for reliable usage of local activities. Frail linkages between various divisions and powerless data stream and insufficient institutional limit emerging from low levels of mindfulness, instruction and preparing hamper far reaching and incorporated advancement. Constrained or absence of valuation for the limited nature and monetary estimation of water by a few segments of the populace and restricted mindfulness and additionally absence of successful partner support and association in basic leadership at a nearby, national and local levels, especially ladies, the adolescent, the crippled and the poor remain an awesome test to tending to water shortage issues in the area.

5.3. Conclusion

Regarding the Challenges Faced by States over Trans boundary Water Shared Resources in the SADC the study concluded that many international actors are operative in the African physical setting, so turning local geographic spaces into arenas of international politics. African state actions are scrutinized by donors and circumscribed by a variety of political and economic conditionalities. Activities fostering regional cooperation/integration are privileged by all donors who view such activities as having peace-building and economic development potential. SADC state actors are not merely policy-takers; they are actively pushing state-specific and collective agendas, raising capital for water-related development projects, and shaping the content of global discourses of water management to fit local realities. The latter manifests most recently as SADC state actor attempts to shift global discussions regarding IWRM toward regional realities:

IWRDM where 'D' is development – unlike Western states, SADC policy makers are keen to continue with what Allan describes as 'the hydraulic mission'.

On the effectiveness of Policies/Agreements in Preventing Conflicts over Shared Water Resources the study concluded that the water shortage wild in a few sections of the area and contending formative necessities between part states may bring about debate and strain over water. Different difficulties emerge from an assortment of truths including the way that precipitation in the SADC locale is very factor, with the subsequent effect on unwavering quality and catastrophe related with dry seasons; the accessible water assets are unevenly dispersed over the district and water accessibility and request are not coordinated.

The study further concluded that one of the unintended outcomes of pioneer heritage is the production of an extensive number of global waterways in the Southern African area. Pioneer controls actually, utilized these streams to outline universal fringes between nations. Therefore, of the 63 worldwide waterway basins found in Africa, 22 are found in the Southern African area alone and the limits of the 12 SADC states lie on 15 noteworthy universal stream frameworks. This suggests each of these waterway frameworks must be shared between at least two states at once. An intricate arrangement of linkages and interdependencies between the conditions of the SADC district is in this manner built up as none of these countries can assert sovereign control over these water assets. For instance, the four most financially created nations in Southern Africa -the Republic of South Africa, Botswana, Zimbabwe and Namibia- share two noteworthy worldwide stream basins: the Orange and Limpopo alongside various different basins with riparian states.

5.4. Recommendation

According to the findings of the study the following recommendations were made:

The agreement be appropriately amendment, through rectifying the omissions in it and taking into account the unique factors and characteristics in the basin, if to transform the river basin into a useful regime able facilitate the equitable and reasonable utilization of the water resources among all the river basin riparian states including the environment and future generations. Only then shall the river basin regime ably perform its function of ensuring that the utilization and abstractions of the water resources in the river basin, regardless of the uses or geographic destination of such water resources are equitable, sustainable, in conformity to the allocated rights and agreed upon regime flows, and not contrary with the principle of equitable and reasonable utilization as provided by international water law and SADC regional water law.

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