

**UNIVERSITY OF THE WESTERN CAPE**

**FACULTY OF LAW**

**“THE LAW AND POLICY GOVERNING INTER-BASIN TRANSFERS OF  
FRESHWATER RESOURCES IN THE SOTHERN AFRICAN DEVELOPMENT  
COMMUNITY (SADC) REGION”**

A mini-thesis submitted in partial fulfilment of the requirement for the LL.M  
degree in the Faculty of Law, University of the Western Cape



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## DECLARATION

I, Glenwin Sefela, do hereby declare that this research is my original work and that to the best of my knowledge and belief; it has not been previously, in its entirety or in part, been submitted to any other university or institution for a degree or diploma. Other works cited or referred to are accordingly acknowledged. It is in this regard that I hereby present it in partial fulfillment of the requirements for the award of LLM Degree in Environmental Law. Errors or omissions, if any, shall remain my sole responsibility.

Signed:  .....

Date: 27/02/2012 .....



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## Dedication

I dedicate this mini-thesis to my loving parents Glen and Lynne Sefela and to my brother Sheldon Sefela for their encouragement and relentless support that has brought me this far in life. I further dedicate this to Bronwyn LiezelDuminy, a special friend in my life, for her continued encouragement and words of inspiration.



## Acknowledgement

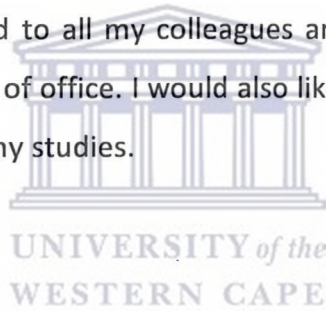
First and foremost, I would like to thank the Lord for blessing me with tremendous knowledge, wisdom and respect and for granting me life in abundance.

Secondly, many thanks and gratitude go to my supervisor, Prof Tobias van Reenen, for his wise council and the opportunity to learn under his guidance and supervision. There is no doubt that his insightful criticism and comments have aided me to shape my mini-thesis.

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## KEYWORDS

Co-management

Good Neighbourliness

Integrated River Basin Management (IRBM)

Integrated Water Resource Management (IWRM)

Inter-basin transfer (IBT)

Law

Policy

River Basin Organizations (RBO's)

Southern African Development Community (SADC) Region

State Responsibility



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## LIST OF ACRONYMS

<b>EIA</b>	Environmental Impact Assessment
<b>IBT</b>	Inter-basin Transfer
<b>IRBM</b>	Integrated River Basin Management
<b>IWRM</b>	Integrated Water Resource Management
<b>JPTC</b>	Joint Permanent Technical Commission
<b>LHWP</b>	Lesotho Highlands Water Project
<b>LVRLAC</b>	Lake Victoria Region Local Authorities Co-operation
<b>NEMA</b>	National Environmental Management Act
<b>OKACOM</b>	Okavango River Basin Commission
<b>ORASECOM</b>	Orange-Senqu River Commission
<b>PWC</b>	Permanent Water Commission
<b>RBO</b>	River Basin Organisation
<b>SADC</b>	Southern African Development Community
<b>WDM</b>	Water Demand Management



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## CHAPTER 1

### 1.1 Introduction

Water scarcity is a worldwide threat.<sup>1</sup> Fresh water resources are vital to human existence and survival. The challenge faced relates to the way these water resources are being distributed and managed.<sup>2</sup> As an answer to this challenge, humans responded with what is commonly known as water transfers. A water transfer refers to the importation of water where water supply is low. Water transfers are, however, not a new concept as it dates back to the ancient Mesopotamians.<sup>3</sup> Today, due to the global population having drastically increased, water transfers, or inter-basin transfers (IBTs) are increasingly being used as a means to minimize current water shortages.<sup>4</sup>

IBTs refer to the extraction of water from natural rivers or lakes, into another river or lake which has a shortage of water or to a man-made dam, for purposes of storage.<sup>5</sup> IBTs are also viewed as a major form of river basin manipulation.<sup>6</sup> Or phrased another way, an inter-basin transfer scheme involves 'the movement from catchment areas with good supplies and low demand, to those where demand is high and availability low'.<sup>7</sup> The main purpose of an IBT is to alleviate a designated water shortage in the quickest time in a given geographical area.<sup>8</sup> IBTs arise from necessity due to the water supply and water demands of a particular society.<sup>9</sup>

IBTs find application in southern Africa due to the fact that although South Africa, Namibia, Zimbabwe and Botswana are seen as the four most economically developed countries in the

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<sup>1</sup>Pittock, J., Meng, J., Geiger, M., Chapagain, A.K. (2007) 2nd ed. Interbasin water transfers and water scarcity in a changing world- a solution or a pipedream? A discussion paper for a burning issue. p6. Herein after Pitock *et al.* Available at <http://www.assets.panda.org/downloads/pipedreams18082009.pdf> (last accessed 4 March 2010).

<sup>2</sup>Preamble of the National Water Act 36 of 1998.

<sup>3</sup>McCaffrey S *The Law of International Watercourses, Non- Navigational Uses* (2001) 6.

<sup>4</sup>Snaddon, Wishart, Davies 'Some implications of inter-basin water transfers for river ecosystem functioning and water resources management in southern A/frica '(1998) 1. Available at <http://www.informaworld.com/smpp/content~db=all~content=a905225478~frm=abslink> (last accessed 5 March 2010). Herein after Snaddon *et al.*

<sup>5</sup>[http://www.snwa.com/html/system\\_gdp\\_transfers.html](http://www.snwa.com/html/system_gdp_transfers.html) (last accessed 4 March 2010).

<sup>6</sup>Snaddon *et al* (1998) 1.

<sup>7</sup>King NA, Maree G & Muir 'Freshwater Systems' in Strydom and King (eds) *Environmental Management in South Africa* (2009) 437. Hereafter King *et al* (2009).

<sup>8</sup>King *et al* (2009) 437.

<sup>9</sup>King *et al* (2009) 437.

region, they are also the most water-stressed.<sup>10</sup>To add to this unfortunate circumstance, these four countries share two main international river basins, namely: the Orange and the Limpopo.<sup>11</sup> These two river basins are of strategic importance as they have the potential of limiting economic growth in both a domestic and regional sense.<sup>12</sup> The strategic importance of these basins is deciphered by ‘the extent of economic development that each river basin supports, along with the availability of alternative water resources for the respective riparian States<sup>13</sup> involved’.<sup>14</sup>

IBTs in itself, are complex in nature as ‘water is the world’s most accomplished traveller’<sup>15</sup>, crossing and sharing many borders worldwide. It is due to this reason that integrated management of IBTs must occur within the SADC region as it will prove to be of utmost importance if we are to potentially overcome our water problem, not only in a regional sense but worldwide.



## 1.2 Problem Statement

The problem with regard to IBTs is that the receiving basin is plagued with negative impacts.<sup>16</sup> These negative impacts include: the introduction of invasive species, the loss of biodiversity, and the spread of disease vectors. This problem is further manifested in that the River Basin Organizations (RBOs), which ironically are responsible for the integrated facilitation, co-ordination of development and management of their respective basin, are in a poor state of operation.<sup>17</sup>

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<sup>10</sup>Turton, A.R. ‘World Summit on Sustainable Development IUCN Environment and Security’. River Basin Commissions in Southern Africa. Day 3 September 2002, Johannesburg. Available at <http://www.awiru.co.za/pdf/op3.pdf> (last accessed 4 March 2010). Herein after Turton ‘World Summit on Sustainable Development IUCN Environment and Security’.

<sup>11</sup>Preamble of the National Water Act 36 of 1998.

<sup>12</sup>Pittocket *al* 6.

<sup>13</sup> ‘Riparian State’ means a State through whose territory or along whose border a watercourse passes.

<sup>14</sup>Turton ‘World Summit on Sustainable Development IUCN Environment and Security’.

<sup>15</sup>Marowski Environmental viewpoints 1.

<sup>16</sup>King *et al* (2009) 429.

<sup>17</sup> United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At xii.

Further, as the largest economies in the southern part of the region can only meet their water demand from international rivers, there is a vital call within the SADC region for IBTs.<sup>18</sup> The one situation which this leads to is the creation of a potential conflict in the use of this transboundary resource. This problem is further aggravated due to the fact that southern Africa at present is a water stressed<sup>19</sup> region.<sup>20</sup> The southern African countries therefore rely heavily on IBTs in order to meet, and in turn relieve, individual water needs.<sup>21</sup> Ironically, in order for these countries to meet their individual needs, they must co-operate with one another. Such co-operation is dependent on the respective RBOs.

In the past various separate agreements between states within the region were concluded as a means of co-ordinating the watercourses. At present, only the Revised SADC Protocol regulates the common utilisation and management of the resources of shared watercourse systems in the SADC region.<sup>22</sup> This instrument, however, does not specifically deal with IBTs, nor does it specifically provide for the management of negative impacts or ecological impacts that may result. It merely provides for the establishment of River Basin Management Institutions which, amongst others, are responsible for managing an IBT.<sup>23</sup>

Moreover, in order to minimise or even eliminate the negative impacts suffered by the receiving basin, the respective RBOs of both States have to be improved. This, however, is dependent on the improvement of Integrated River Basin Management<sup>24</sup> (IRBM), Integrated Water Resource Management<sup>25</sup> (IWRM), as well as improved Environmental Impact

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<sup>18</sup> Zhou P 'The SADC Water Protocol' in Tevera D and Moyo S (eds) *Environmental Security in Southern Africa* (2000) 159.

<sup>19</sup> Water stress refers to 'economic, social, or environmental problems caused by unmet water needs'. Available at <http://www.cfr.org/africa/water-stress-sub-saharan-africa/p11240#p2> (last accessed 4 March 2010)

<sup>20</sup> C.W Tatlock 'water stress in sub-Saharan Africa' available at <http://www.cfr.org/publication/11240/water-stress-in-subsaharan-africa.html> (last accessed 4 March 2010).

<sup>21</sup> Turton 'World Summit on Sustainable Development IUCN Environment'.

<sup>22</sup> The Preamble of the Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region (The SADC Protocol).

<sup>23</sup> SADC Protocol Article 3.

<sup>24</sup> 'Integrated River Basin Management (IRBM) is the process of coordinating conservation, management and development of water, land and related resources across sectors within a given river basin, in order to maximise the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems'.

<sup>25</sup> IWRM is a 'process which promotes the coordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare, paving the way towards sustainable development, in an equitable manner without compromising the sustainability of vital ecosystems'.

Assessments (EIA).<sup>26</sup> It is for this reason that these countries should strive to transform from fragmented to integrated management of IBTs within the region<sup>27</sup>.

Therefore, there is a call for an effective legal and regulatory framework in respect of IBTs; not only to avoid water resource conflict but to effectively regulate and manage the negative impacts produced by IBTs.<sup>28</sup>

### 1.3 Rationale

The purpose of this study is to show that 'without functioning RBOs, environmental security issues (i.e. freshwater resources) will probably remain unaddressed and potential for conflict is likely to increase as a result'.<sup>29</sup>

It is for this reason that there is a call for integrated management of IBTs. Turton is of the opinion that there is a need for RBOs which serve the same function<sup>30</sup> as IRBM as a form of IWRM within the region.<sup>31</sup> Through improved IRBM and IWRM, RBOs and consequently the negative impacts of IBTs on the receiving basin will be less problematic. Therefore, only through improved integrated management will success be achieved.

Further, in the 1960s and 1970s when most African countries obtained their independence, a number of inter-country co-operative efforts among the riparian countries were undertaken in the form of transboundary RBOs.<sup>32</sup> These international agreements illustrate

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<sup>26</sup> King *et al* (2009) 429.

<sup>27</sup> UN Water Report: Status Report on Integrated Water Resources Management and Water Efficiency Plans Prepared for the 16th session of the Commission on Sustainable Development - May 2008 4. Hereinafter The UN Water Report. Available at [www.unwater.org/downloads/UNW\\_Status\\_Report\\_IWRM.pdf](http://www.unwater.org/downloads/UNW_Status_Report_IWRM.pdf) (last accessed 7 March 2010).

<sup>28</sup> Zhou P 'The SADC Water Protocol' in Tevera D and Moyo S (eds) *Environmental Security in Southern Africa* (2000) 159.

<sup>29</sup> Turton 'World Summit on Sustainable Development IUCN Environment and Security'.

<sup>30</sup> IRBM is a process of coordinating the management and development of the water, land, biological and related resources within a river basin, so as to maximize the economic and social benefits in an equitable way while at the same time conserving freshwater ecosystems and species. IRBM is also being applied as the administrative framework to see enhanced integration of economic development, community well-being and environmental sustainability into decision-making.

<sup>31</sup> Turton 'World Summit on Sustainable Development IUCN Environment and Security'.

<sup>32</sup> United Nations Economic Commission for Africa: *Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements*. December 2000. At xi.

that the 'use, development and distribution of water resources have been the central concern for societies' which as mentioned above dates back to at least 3000 B.C.<sup>33</sup>

Therefore, IBTs and the proper management thereof, are vital to potentially overcoming the current water shortage challenge as well as potentially limiting the adverse effects that they have on the environment through improved integrated management.

#### 1.4 Theoretical Assumption

IBTs would be non-functional and thus non-existent without any kind of domestic, regional or international collaboration. Thus, IRBM is crucial as it procures toward transboundary co-operation. From the aforesaid, transboundary co-operation should be the cornerstone for not only establishing and managing IBTs but any global concern. As transboundary co-operation is pivotal when speaking of IBTs, one should realise that these States have an international duty to co-operate. Such duty to co-operate is built on State responsibility<sup>34</sup>.<sup>35</sup> The law of State responsibility regulates the accountability of States under international law.<sup>36</sup> State responsibility, however, is not limited to liability for environmental damage, but has a wider application in the enforcement of international obligations concerning protection of the environment and prevention of transboundary harm.<sup>37</sup>

Agenda 21 which is a product of the Rio Declaration specifically notes: 'We are confronted with... the continuing deterioration of the ecosystems on which we depend for our well-being'. Agenda 21, in its Preamble further provides that 'greater integration of environment and development concerns will lead to much improved protected and managed ecosystems'. Further, in terms of Agenda 21, the widespread scarcity of freshwater resources demands integrated water resource planning and development. Agenda 21 also proposes integrated water resources development and management as a programme area. Agenda 21 thus provides the overriding premise: 'No nation can achieve this on its own; but together we can'.

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<sup>33</sup> McIntyre *Environmental Protection of International Watercourses under International Law* 9.

<sup>34</sup> The International Law Commission has defined state responsibility as 'every internationally wrongful act of a State entails the international responsibility of that State'.

<sup>35</sup> Birnie PW, Boyle AE and Redgwell C *International Law and the Environment* (2009) 215. Herein after Birnie *et al* (2009).

<sup>36</sup> Birnie *et al* (2009) 214.

<sup>37</sup> Birnie *et al* (2009) 214.

The premise of integrated co-operation (and good-neighbourliness) is further affirmed by the Convention on the Law of the Non-navigational Uses of International Watercourses<sup>38</sup>. The said Convention is conscious of the special situation and needs of developing countries<sup>39</sup>.<sup>40</sup> Article 5 of the Convention reiterates that Watercourse States<sup>41</sup> 'shall participate in the use, development and protection of an international watercourse<sup>42</sup> in an equitable and reasonable manner'. Article 8 (1) strengthens the premise that Watercourse States have the general obligation to co-operate 'on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse'. Moreover, Article 8 (2) goes on to provide some avenues through which such co-operation can take place, i.e. joint mechanisms or Commissions.

The SADC Protocol on Shared Watercourse Systems to which South Africa, Namibia, Botswana and Zimbabwe are parties, first and foremost bears in mind and recognises, amongst others, the relevant provisions of both Agenda 21 and the Convention on the Law of the Non-navigational Uses of International Watercourses. The Protocol is also 'desirous of developing close cooperation for judicious and coordinated utilisation of the resources of the shared watercourse systems in the SADC region'. In its Preamble the Protocol is further 'convinced of the need for coordinated and environmentally sound development of the resources of shared watercourse systems in the SADC region in order to support sustainable socio-economic development'.

Moreover, one of the general principles of the Protocol is that Member States 'within a shared watercourse system undertake to pursue and establish close cooperation with regard to the study and execution of all projects likely to have an effect on the regime of the watercourse system'.

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<sup>38</sup> Adopted by the General Assembly of the United Nations on 21 May 1997.

<sup>39</sup> I.e. amongst others in southern Africa: South Africa, Namibia, Botswana and Zimbabwe.

<sup>40</sup> Preamble Convention on the Law of the Non-navigational Uses of International Watercourses.

<sup>41</sup> 'Watercourse State' means a State Party to the present Convention in whose territory part of an international watercourse is situated or a Party that is a regional economic integration organization, in the territory of one or more of whose Member States part of an international watercourse is situated.

<sup>42</sup> 'International watercourse' means a watercourse, parts of which are situated in different States.



Therefore, these international and regional instruments not only support my premise but oblige States to proceed toward integrated collaboration in relation to freshwater systems. This should be done in order to alleviate the negative impacts experienced during IBTs.

### 1.5 Methodology

States have the overall responsibility to implement legislation and policy in order to meet their constitutional obligations.<sup>43</sup> This is done by the State acting through its different organs of state. The legislature's role is to make reasonable legislation whereas the executive is required to take reasonable legislative and other measures.<sup>44</sup>

At the regional level however, South Africa, Namibia, Botswana and Zimbabwe are, amongst others<sup>45</sup>, party to the SADC Protocol. That being the case, these States have a collective duty, amongst others, to develop, conserve and protect the water resources of the region through IWRM.<sup>46</sup> The SADC Protocol is also 'Desirous of developing close cooperation for judicious and coordinated utilisation of the resources of the shared watercourse systems in the SADC region'.

Further, the SADC Regional Water Strategy<sup>47</sup> recognises:

*thereed to promote harmonisation between the national water policies, legislation and management strategies of SADC Member States, in the interests of managing shared watercourses and achieving regional integration.*<sup>48</sup>

IBTs are thus created through an agreement by the executives of both States (i.e. the donor and receiving State). Through developing IBT's both States have the obligation of improving access to the resource for purposes which serve either a national, regional or international

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<sup>43</sup> Kidd M *Environmental Law* (2008) 207-208.

<sup>44</sup> *Government of the Republic of South Africa v Grootboom and Others* 2001 (1) SA 46 (CC).

<sup>45</sup> The Republic of Angola, the Republic of Botswana, the Kingdom of Lesotho, the Republic of Malawi, the Republic of Mozambique, the Republic of Namibia, the Republic of South Africa, the Kingdom of Swaziland, the United Republic of Tanzania, the Republic of Zambia and the Republic of Zimbabwe.

<sup>46</sup> Preamble of the Protocol on Shared Watercourse Systems in the Southern African Development Community Region.

<sup>47</sup> Final draft of June 1996.

<sup>48</sup> SADC Regional Water Strategy 24.

interest. In other words, the state is exercising its duty with regard to the making available of such natural resource for various purposes<sup>49</sup>.

Thus, although the overall responsibility of implementing legislation in order to comply with constitutional obligations rests with the respective government of a State, those States also have a reciprocal duty to fulfil their regional and international obligations.

### **1.6 Hypothesis**

The anticipated outcome of this research is that if South Africa, Namibia, Botswana and Zimbabwe can better co-ordinate their efforts, then, improved management of the negative effects of IBTs will occur.

The question to be asked then is: can South Africa, Namibia and Botswana work in partnership in order to achieve, amongst others, improved management of IBTs of fresh water, and if so, what type of effect(s) whether long or short term, if any, will this have on the domestic, regional and international economic situations.

The anticipated results from my research will potentially indicate that although there are current mechanisms in place (i.e. Integrated River Basin Management) and possible future mechanisms, proper co-ordination thereof and collaborative efforts have to take place in order for IBTs to serve their full potential and purpose. These efforts will see much improved management of IBTs for securing the availability of freshwater for purposes for which water is needed as a collective benefit.

### **1.7 Research Question**

To investigate whether the SADC States have adopted policy and regulatory measures with a view to manage the negative impacts which occur as a result of IBT's.

### **1.8 Research Objective**

- a) To investigate what States have done thus far with regard to managing these negative impacts.

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<sup>49</sup> These purposes include: agriculture, human consumption, navigation and industrial use.

- b) To establish whether the policy and regulatory measures are actually appropriate, effective and adequate.
- c) To define and conclude what needs to be done if gaps are to be bridged and whether there is room for improvement.



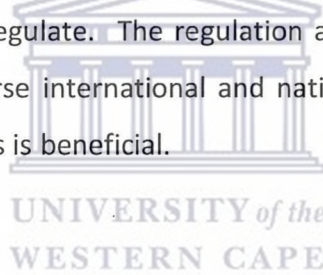
## CHAPTER 2

### AN ANALYSIS OF INTER-BASIN TRANSFERS AND THE POSSIBLE NEGATIVE EFFECTS THEY HAVE ON THE ENVIRONMENT

#### 2.1 Background to inter-basin transfers (IBTs)

Water transfers date back as early as 312 BC.<sup>50</sup> The Romans were the first to develop a water supply system known as aqueducts<sup>51, 52</sup>. These water transfers were used throughout history and were even adopted by the ancient Mesopotamians who 'made extensive use of canals to bring water to the city of Babylon'<sup>53</sup>, as well as by the ancient Chinese.<sup>54</sup> Today, as a result of advances in technology, great quantities of water are able to be transported over vast distances. This type of water importation is commonly known as IBTs.

Although IBTs has been around for centuries, this does not imply that it is a simple water supply system to develop and regulate. The regulation and management of IBTs are of a complex nature as IBTs transverse international and national boundaries. The question is whether the development of IBTs is beneficial.



#### 2.2 Benefits of IBTs

Worldwide, water is a scarce resource. Freshwater resources are mainly found in rivers and lakes.<sup>55</sup> Africa is the second driest continent next to Australia<sup>56</sup> as Africa, and specifically

<sup>50</sup><http://www.dl.ket.org/latin3/mores/aqua/index.htm> (last accessed on 24 Feb 2011).

<sup>51</sup> 'In 312 BC the Adile Appius Claudius undertook construction on the first aqueduct, appropriately named Aqua Appia. This was a simple underground channel. Next came the Aqua AnioVetus in 272 B.C. Again, this was primarily an underground channel. By 140 B.C. the Aqua Marcia was completed bringing water from the Anio Valley. Eventually there were 11 aqueducts that supplied potable water to Rome, and it is estimated that these aqueducts provided Rome with twelve hundred million litres of water a day. The Romans were dependent upon this water not only for drinking but also for baths, gardens and fountains, and was the source of water for the poor whose homes were not supplied directly. Aqueducts are surely one of the most distinguishing contributions to architecture and hygiene of Roman descent. When visiting Rome today one sees ruins that were aqueducts as well as many fountains that date from several different historical eras'.

<sup>52</sup><http://www.dl.ket.org/latin3/mores/aqua/index.htm> (last accessed on 24 Feb 2011).

<sup>53</sup> Experts believe ceramic pipes discovered in the Indus valley supplied water to cities.

<sup>54</sup> McCaffrey, S (2001) 4.

<sup>55</sup>[http://www.unesco.org/education/educprog/ste/pdf\\_files/sourcebook/module7.pdf](http://www.unesco.org/education/educprog/ste/pdf_files/sourcebook/module7.pdf) (last accessed on 1 March 2011).

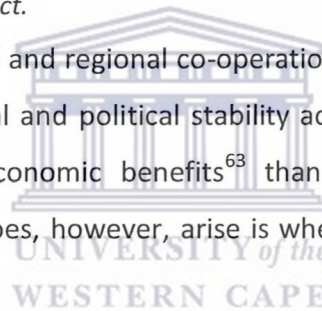
<sup>56</sup><http://www.afriqueavenir.org/en/2010/12/20/africa-is-mobilizing-to-face-the-challenges-of-water/> (last accessed 25 February 2011).

southern Africa, is plagued with unstable rainfall.<sup>57</sup> Due to this, freshwater distribution has proven to be challenging over the years.<sup>58</sup> It is for this reason that IBTs in the SADC region are not only important but are increasingly being used in order to alleviate the water shortage problem. Currently, IBT projects<sup>59</sup> in the SADC region are either underway or being proposed. As outlined in the previous chapter, IBTs serve many potential benefits, such as, hydroelectric power, irrigation and navigation<sup>60</sup> but its most important benefit is to transport water to an area where it is required.

The Lesotho Highlands Water Project<sup>61</sup> (LHWP), for example, saw three main benefits arising from the IBT, namely:

- *South Africa is expected to pay royalties to Lesotho for the water transfer.*
- *Employment will be created due to the creation of the project.*
- *Self – sufficiency in electricity in Lesotho and reduced dependence on imports from South Africa are expected from the project.*

RBOs also influence sub-regional and regional co-operation. RBOs also have the potential to promote 'peace, harmony, social and political stability across the region'.<sup>62</sup> On the whole, however, IBTs create more economic benefits<sup>63</sup> than problems, or conflict between countries.<sup>64</sup> A problem which does, however, arise is when water resources are negatively



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<sup>57</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 1.

<sup>58</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 1.

<sup>59</sup> Examples of these are the Orange-Fish River scheme (which is the largest operational scheme in South Africa), the Tugela-Vaal and the Lesotho Highlands- Vaal schemes as well as the Agreement on the Vioolsdrift and Noordoewer Joint Irrigation Scheme between the Government of the Republic of Namibia and the Government of the Republic of South Africa (VNJIS).

<sup>60</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 6.

<sup>61</sup> The Lesotho Highlands Water Project (LHWP) is a multi-billion dollar water transfer and hydropower project implemented by the governments of Lesotho and South Africa, and is one of Africa's largest water resource developments. It is envisaged to eventually comprise six major dams (four phases), and associated infrastructure, on the headwaters of the Senqu River in Lesotho, which becomes the Orange River as it crosses into South Africa

<sup>62</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 6.

<sup>63</sup> '...despite the potential for dispute international basins, the record of co-operation historically overwhelms the record of acute conflict over international water resources'.

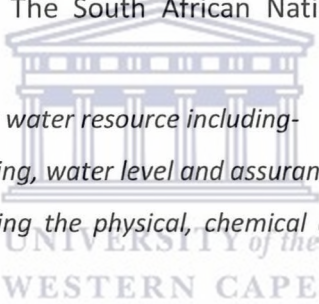
<sup>64</sup>Wolf AT, 'The present and future of transboundary water management' in Figueres CM, Tortajada C and Rockstrom J (eds) Rethinking Water Management: innovative approaches to contemporary issues (2003) 166.

impacted upon. This problem relates to water quality and quantity which negatively affect<sup>65</sup> the catchment areas of downstream users.<sup>66</sup> This problem further affects accessibility to the basic benefits of water, which include water for drinking, sanitation, industrial and agricultural use.<sup>67</sup>

### 2.3 The negative effects of IBTs on the hydrological regime of a watercourse

When there is a transfer of water from one basin to another, the water quality of the receiving basin is negatively impacted upon. Water quality is important when considering whether water is potable. Water quality impacts on water availability (taking into account its various uses) because, even though water might be physically present and in abundance, a possibility of contamination exists, thus making the water unusable.<sup>68</sup>

The availability of water as a resource is, therefore, directly dependent on the management of water quality and quantity. The South African National Water Act<sup>69</sup> defines 'water quality' as:

- 
- the quality of all the aspects of a water resource including-*
- (a) the quantity, pattern, timing, water level and assurance of instream flow;*
  - (b) the water quality, including the physical, chemical and biological characteristics of the water;*
  - (c) the characteristics and condition of the instream and riparian habitat; and*
  - (d) the character, condition and distribution of the aquatic biota.<sup>70</sup>*

Interestingly, the Act provides guidelines and procedures for determining different classes of water.<sup>71</sup> What this means is that there are different standards in relation to water quality, determined by what the resource will be used for, i.e. domestic, agricultural, industrial, or recreational uses. Thus, the water quality standard needed for drinking water will be

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<sup>65</sup>For example, pollution from a poorly managed wastewater treatment works increases the treatment costs and incidents of water related illnesses within a downstream municipality.

<sup>66</sup><http://qisweb.ciat.cgiar.org/wcp/conceptual-framework.htm> (last accessed 5 April 2011).

<sup>67</sup>Local Government and IWRM Reaping the benefits-how Local Government gain from IWRM Part 1. March 28. p4. Herein after Local Government and IWRM Reaping the benefits Part 1.

<sup>68</sup>[http://www.enviropaedia.com/topic/default.php?topic\\_id=240](http://www.enviropaedia.com/topic/default.php?topic_id=240) (last accessed 7 March 2011).

<sup>69</sup>36 of 1998.

<sup>70</sup>Act 36 of 1998, s1 (xix).

<sup>71</sup>Act 36 of 1998, Chapter 3.

different from the water quality standard needed for agriculture.<sup>72</sup>

From a physical point of view, importing water from one basin to another can negatively affect the waterflow and thus runoff of the donor basin due to over-extraction.<sup>73</sup> Biologically, however, one of the biggest problems is the introduction of invasive species. An invasive or 'alien' species is introduced (intentionally or unintentionally) by humans into a geographical area which is 'beyond its accepted normal distribution and which threatens valued environmental, agricultural or other social resources by the damage it causes'.<sup>74</sup> The reason why invasive species are problematic is that some are able to flourish in their new environment because they are no longer being biologically controlled by, for example, the pathogens and predators of their indigenous surroundings.<sup>75</sup>

IBTs make the journey of invasive species easier as they literally create a route for these species to become invasive. Loss of biodiversity is but one effect invasive species have on a watercourse as they out-compete the indigenous species.<sup>76</sup> Secondly, as the invasive species multiply, and are added to the number of indigenous species already present in the watercourse, it is easy to understand why there would be reduced runoff and thus river flow.

In southern Africa, invasive fish<sup>77</sup> and plants<sup>78</sup> have proved to be the most destructive impact on river ecosystems.<sup>79</sup> Plants, in particular, tend to flourish in rapidly thus hindering

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<sup>72</sup>King *et al* (2009) 449.

<sup>73</sup>Day JA 'Rivers and Wetlands' in Strydom and King (eds) *Environmental Management in South Africa* (2009) 854. Hereafter Day JA (2009).

<sup>74</sup><http://www.environment.gov.au/biodiversity/invasive/index.html> (last accessed 1 March 2011).

<sup>75</sup><http://www.environment.gov.au/biodiversity/invasive/index.html> (last accessed 1 March 2011).

<sup>76</sup><http://www.environment.gov.au/biodiversity/invasive/index.html> (last accessed 1 March 2011).

<http://www.gisp.org/casestudies/showcasestudy.asp?id=311&MyMenuItem=casestudies&worldmap=&country=> (last accessed 1 March 2011).

<sup>77</sup>That of trout, bass and carp.

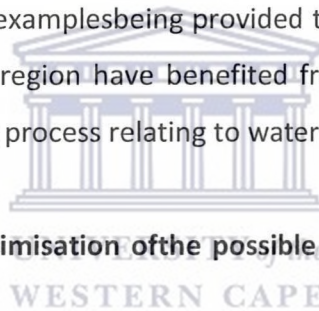
<sup>78</sup>*Salvinia molesta* (commonly known as giant salvinia or kariba weed is an aquatic fern, native to south-eastern Brazil), *Pistia stratiotes* (often called water cabbage or water lettuce. Its native distribution is uncertain, but probably pantropical; it was first described from the Nile near Lake Victoria in Africa. It is now present, either naturally or through human introduction, in nearly all tropical and subtropical fresh waterways), *Eichhornia crassipes* (commonly known as Common Water Hyacinth, is native to the Amazon basin), *Azolla filiculoides* (also known as the Water Fern is native to warm temperate and tropical regions of the Americas as well as most of the old world including Asia and Australia) and *Myriophyllum aquaticum* (known as Parrotfeather is a native of the Amazon River in South America, but it has naturalized worldwide, especially in warmer climates).

<sup>79</sup>Day J 'Management of Freshwater Ecosystems in Southern Africa:

the water flow.<sup>80</sup> Not only do these plants obstruct the water flow but once they die the bacteria that decompose the plant material use up the oxygen in the water, which consequently causes fish-death.<sup>81</sup>

IBTs also facilitate the spread of disease vectors<sup>82</sup>. As water is transported from one catchment area to another so are diseases, moving from one community to another. In the SADC region the most common diseases suffered by humans coming into contact with freshwater, include, among others diarrhea<sup>83</sup> and malaria<sup>84</sup>. Humans become infected, especially in the poorer communities by washing or urinating<sup>85</sup> in the water or drinking contaminated freshwater.

This is where IWRM will play its part. By employing effective IWRM these negative impacts can be effectively managed, minimized or even eliminated. IWRM will be examined next, with both regional and national examples being provided to illustrate how national and thus local governments in the SADC region have benefited from adopting and applying IWRM principles in the decision-making process relating to water resources.



## 2.4 The elimination and/or minimisation of the possible negative effects of IBTs through improved IWRM

IWRM<sup>86</sup> is an internationally accepted policy tool and approach defined as:

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Comparisons and Contradictions' available at <http://www.aaas.org/international/africa/ewmi/jday.htm> (last accessed 4 March 2010).

<sup>80</sup>Day JA (2009) 852.

<sup>81</sup>Day JA (2009) 854.

<sup>82</sup> 'A vector is an organism that unwittingly carries a disease that normally is not harmful to itself, but is harmful to other organisms'. Available at <http://www.ndhealth.gov/epr/public/viral/Vectors.htm> (last accessed 4 March 2011).

<sup>83</sup>Diarrhoea, is the condition of having three or more loose or liquid bowel movements per day. 'It is a common cause of death in developing countries and the second most common cause of infant deaths worldwide. The loss of fluids through diarrhea can cause dehydration and electrolyte imbalances'. Diarrhoea is caused by bacterial infection or parasites contained in contaminated food or water.

<sup>84</sup> 'Malaria is the world's most important parasitic disease transmitted from one person to another through the bite of female Anopheles mosquitoes, which breed in fresh water'

<sup>85</sup> When persons, especially males, urinate in the water, the pathogen enters the urethra opening and makes its way to the bladder thus causing infection.

<sup>86</sup> IWRM has four principles known as the Dublin principles namely:

I. *Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.*



*a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.*<sup>87</sup>

This concept thus aims to strike a balance between economic efficiency, social equity and environmental sustainability (commonly known as the three Es or three principles).<sup>88</sup>

With regard to economic development<sup>89</sup>, water is needed for many activities, such as, mining, forestry, agriculture, industrial and energy based processes<sup>90,91</sup>. The overlapping thought is that although industries depend on water in order to operate, they also negatively impact on the water resource.<sup>92</sup> Examples of these negative impacts include pollution; over-extraction and/or extraction which affect the water quality for both the downstream users and natural ecosystems.<sup>93</sup> Thus, 'managing water as an economic good is an important way of achieving efficient and equitable use, and encouraging conservation and protection of water resources', which is the object of IWRM.<sup>94</sup> It should also be noted that the value of usable water is hard to quantify and 'requires considerations of quantity, quality, timing, and accessibility'.<sup>95</sup> The quality of water affects whether it can be used; its location determines its accessibility; and the time of availability has an impact on its reliability to be used.<sup>96</sup> Water quality has the potential of hindering economic development, especially in light of IBTs, as IBTs (through its respective RBO) has the potential of facilitating economic integration.

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II. *Water development and management should be based on a participatory approach, involving user's planners and policy makers at all levels.*

III. *Women play a central part in the provision management and safeguarding of water.*

IV. *Water has an economic value in all its competing uses and should be recognized as an economic good.*

<sup>87</sup> Global Water Partnership Technical Committee (TEC) Background papers no 8: Poverty Reduction and IWRM. At 4. Hereafter Global Water Partnership TEC

<sup>88</sup> Global Water Partnership (TEC) at 4.

<sup>89</sup> 'Economic development occurs with the expansion of the economic base of a community, region, state, or nation through the efficient allocation and use of available resources'.

<sup>90</sup> A case in point is the LHWP. Being the industrial capital of South Africa, the Gauteng province is dependent on the imported water from Lesotho.

<sup>91</sup> [http://www.usaid.gov/our\\_work/environment/water/econ\\_growth.html](http://www.usaid.gov/our_work/environment/water/econ_growth.html) (last accessed 30 March 2011).

<sup>92</sup> The UN Water Report at 3.

<sup>93</sup> The UN Water Report at 3.

<sup>94</sup> <http://www.sswm.info/category/concept/iwrm> (last accessed 31 March 2011).

<sup>95</sup> [http://www.eoearth.org/article/Water\\_resources#qen4](http://www.eoearth.org/article/Water_resources#qen4) (last accessed 31 March 2011).

<sup>96</sup> [http://www.eoearth.org/article/Water\\_resources#qen4](http://www.eoearth.org/article/Water_resources#qen4) (last accessed 31 March 2011).

From a social point of view, it is universally accepted that every human being has a right to access to water.<sup>97</sup> It is, therefore, common cause that having access to water has a bearing on the social well-being of any given society. It should, however, be borne in mind that water is a scarce resource and being such, the equal allocation of water is not an easy task. The development of IBTs will thus make the difficult task of equitable allocation of water slightly easier. It is, therefore, clear why Mudacumura conceives social development as 'consisting of a participatory decision-making system through which empowered people devise strategies aimed at fostering global equity and preserving cultural practices, while recognising the complex challenges of securing current and future generations welfare'.<sup>98</sup> Thus, people are essential in any development plan, mostly when they are empowered and are able to participate in any debate which has a direct impact on their lives.<sup>99</sup> This is why public participation should always be a policy tool, especially when rights of society will be affected. This should be of no exception with regard to constructing IBTs. Public participation is a key factor when considering the possible effects an IBT can have on the affected communities.



Ecologically, water should be managed and protected in a way so as not to deplete this precious resource. This is the cornerstone of the concept of sustainable development. Further, one of the pillars<sup>100</sup> of sustainable development is environmental protection. This pillar simply aims at maintaining the essential ecological processes and life support systems, the preservation of genetic diversity and the sustainable utilization of species and the ecosystem.<sup>101</sup> The biggest challenge, arising from this, is the potential of over-utilization of either a specific natural resource or natural resources as a whole. Thus, the responsibility rests not only on the shoulders of government and stakeholders but also on society to be diligent and to take precautionary measures whenever they interact with the environment, especially when planning to develop it. In terms of planning an IBT, the developer must undertake an Environment Impact Assessment (EIA) as well as set out all precautionary measures to be taken before construction can take place in order to ensure the protection

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<sup>97</sup> <http://www.watertreaty.org/convention.php> (last accessed 31 March 2011).

<sup>98</sup> Mudacumura (2006) 150.

<sup>99</sup> Mudacumura (2006) 34.

<sup>100</sup> The three pillars of sustainable development are: economic development, environmental protection and social development.

<sup>101</sup> Rogers, Jalal and Boyd (2008) 44. Herein after Rogers *et al.*

and sustainability of the water resource.

The above illustrates the influence that water has on economic efficiency, social equity and environmental sustainability in terms of employing effective IWRM to manage the possible negative impacts of IBTs. To be further noted is that IWRM is a systematic process for the sustainable development, allocation and monitoring of water use in a social, economic and environmental context.

To date IWRM has become more and more needed due to water as a resource being scarce. A major contributing factor to this is population growth. As populations increase so do water demands based on higher food production, and economic and social activities.<sup>102</sup> Prior to IWRM evolving into a concept and viable approach, water resources of the world were being managed in a fragmented way. Today, the implementation of IWRM procures toward co-management of water resources for the benefit of all. IWRM essentially means that the different uses of water (although they exist independently of each other), are considered as a collective when taking decisions which affect them.<sup>103</sup>

Effective decisions can only be fostered if the stakeholders fully participate in the decision-making process.<sup>104</sup> The participatory decision-making element is the secret ingredient to effective IWRM. IWRM decision-making has to take place at the lowest appropriate level to achieve its full potential.<sup>105</sup> It is, therefore, advantageous for local governments in the SADC region to implement IWRM with the aim of protecting, conserving and better managing the water resources. Although local government does not have a direct mandate to manage water resources, it is mandated by activities and decisions which relate (either directly or indirectly) to water resource management.<sup>106</sup> This thus places it in an exclusive position to not only encourage<sup>107</sup> IWRM but to engage in it too. This engagement, however, should not

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<sup>102</sup>The UN Water Report at 5.

<sup>103</sup>[http://www.archive.cap-net.org/iwrm\\_tutorial/1\\_2.htm](http://www.archive.cap-net.org/iwrm_tutorial/1_2.htm) (last accessed 30 March 2011).

<sup>104</sup><http://www.sswm.info/category/concept/iwrm> (last accessed 31 March 2011).

<sup>105</sup>[http://www.archive.cap-net.org/iwrm\\_tutorial/p\\_17\\_1.htm](http://www.archive.cap-net.org/iwrm_tutorial/p_17_1.htm) (last accessed 12 March 2011).

<sup>106</sup>Local Government and IWRM reaping the benefits Part 1. p13.

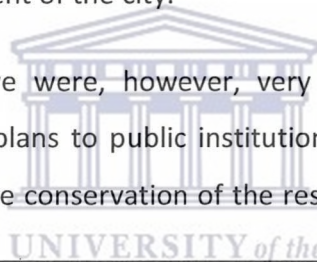
<sup>107</sup>Encouragement can take place by:

- 'Broadening stakeholder involvement in decision making thereby enabling a more participatory approach to water resources management at the local level.
- Giving effect to IWRM policy and legislation developed by higher level institutions and achieving goals related to specific local mandates such as water supply and sanitation.

only remain within national boundaries but expand regionally and even internationally with the aim of adopting an IWRM approach. This should be kept true, especially when trying to overcome the possible negative impacts associated with IBTs.

The potential benefits to local government of using IWRM nationally can be exemplified by the success stories of Namibia and Zimbabwe. In 1994 Namibia's capital, Windhoek, introduced Water Demand Management (WDM).<sup>108</sup> The success that was achieved had much to do with the multi-prong approach which saw Namibia adopt policy<sup>109</sup>, legislative<sup>110</sup> and technical measures<sup>111</sup> and most importantly, involve the public through various campaigns<sup>112</sup>. From an IWRM perspective, the saving in water consumption reduced overall demand, which satisfies the sustainability principle.<sup>113</sup> From an equity point of view this initiative improved the certainty of supply to users.<sup>114</sup> The efficiency element saw Windhoek save a substantial amount<sup>115</sup> in water reduction costs which aids and allows for further economic growth and development of the city.<sup>116</sup>

The actions taken by Zimbabwe were, however, very different. Zimbabwe sold liquid effluent wastewater treatment plants to public institutions<sup>117</sup> for purposes of irrigation.<sup>118</sup> This method thus helped with the conservation of the resource and its use in a sustainable



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- Limiting negative impacts to water resources by being a responsible water 'user' and, by ensuring appropriate development through mandates such as land-use planning, local economic development and solid waste management and through infrastructural projects'. Sourced from Local Government and IWRM reaping the benefits Part 1. p13.

<sup>108</sup> Namibia is the most arid country in sub-Saharan Africa, with an annual rainfall of 330mm. 'All natural sources of water for the City of Windhoek have been completely utilised and at times evaporation accounts for more than twice as much water as that used by consumers'.

<sup>109</sup> In terms of: raising the block tariff system, maximising re-use of water, smaller plot sizes and densification, urbanisation guidelines, guidelines on "wet" industries and reducing municipal water use. Sourced from Local Government and IWRM reaping the benefits Part 1. p17.

<sup>110</sup> Such as: preventing undue water consumption on private properties, use of water efficient equipment, set time for watering gardens, requirement to cover swimming pools, control of groundwater abstraction, prevention of surface and groundwater pollution. Sourced from Local Government and IWRM reaping the benefits Part 1. p17.

<sup>111</sup> With the aim of: lowering of non-revenue water, having regard for efficient watering of gardens, artificial recharge of Windhoek aquifer, rainwater harvesting and the re-use of waste water. Sourced from Local Government and IWRM reaping the benefits Part 1. p17.

<sup>112</sup> Educational programmes, consumer advisory services, advice on water efficient gardening and community empowerment. Sourced from Local Government and IWRM reaping the benefits Part 1. p17.

<sup>113</sup> Local Government and IWRM reaping the benefits Part 1. p17.

<sup>114</sup> Local Government and IWRM reaping the benefits Part 1. p17.

<sup>115</sup> N\$ 3.38 million.

<sup>116</sup> Local Government and IWRM reaping the benefits Part 1. p17.

<sup>117</sup> Such as schools, hospitals and parks.

<sup>118</sup> Local Government and IWRM reaping the benefits Part 1. p18.

manner<sup>119</sup>. Just as in Windhoek, the WDM initiative aided in the security of the resource for purposes of increased supply to Bulawayo. Further, due to this WDM, water loss has been reduced and the re-use of this resource has seen other economic activities<sup>120</sup> being benefited.<sup>121</sup>

The lessons than can be taken from Namibia and Zimbabwe (which employed principles of IWRM) in relation to IBTs are that public participation and awareness is an essential element when the objective is securing water resources for increased supply due to the lack thereof.

South Africa has also implemented IWRM at the level of local government. The city of Durban experienced great losses<sup>122</sup> because of the misuse and abuse of the sewage facilities which led to pollution build-up.<sup>123</sup> Due to this the Durban Metro Water Services launched the Sewage Disposal Education Programme in an effort to educate the less fortunate communities on the importance and proper use of sewage facilities.<sup>124</sup> The objective of this programme is to create a better understanding of the workings of the sewerage system amongst communities, particularly for first-time users, and involves both public and private partnerships.<sup>125</sup>

This was achieved through innovative educational interventions including educational campaigns delivered to schools<sup>126</sup> and communities, a curriculum guide for learners, a road show and theatre performances in informal settings<sup>127, 128</sup>. Performances are mostly structured with the aim of reaching out to the less literate members of communities.<sup>129</sup> Due to the Sewage Disposal Education Programme high levels of pollution have subsided satisfying the sustainability element of IWRM. Consultation with the various users<sup>130</sup> has

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<sup>119</sup> An example of this is the increasing block tariff structure which has reduced average water consumption by approximately 23%.

<sup>120</sup> Such as irrigated crops and plantations.

<sup>121</sup> Local Government and IWRM reaping the benefits Part 1. p18.

<sup>122</sup> Losses of about R6 million.

<sup>123</sup> Local Government and IWRM reaping the benefits Part 1. p20.

<sup>124</sup> <http://www.bestpractices.org/bpbriefs/watesan.html> (last accessed 14 April 2011).

<sup>125</sup> <http://www.bestpractices.org/bpbriefs/watesan.html> (last accessed 14 April 2011).

<sup>126</sup> Educational resources and toolkits have been designed for use in schools.

<sup>127</sup> Such as, clinics, taxi ranks and shopping centres and a Wastewater Education Awareness Centre.

<sup>128</sup> <http://www.bestpractices.org/bpbriefs/watesan.html> (last accessed 14 April 2011).

<sup>129</sup> <http://www.bestpractices.org/bpbriefs/watesan.html> (last accessed 14 April 2011).

<sup>130</sup> The Education Campaign has reached 141,646 learners and 212,104 adults. A further 35 600 adults and 40 000 school children were reached through 550 street performances in one year. The Programme has been

assisted in attaining equity.<sup>131</sup> Further, the decrease in blockages<sup>132</sup> has facilitated a more efficient use of the resource.<sup>133</sup>

Similarly, educational programmes, interventions and seminars can be arranged between the governments proposing or agreeing to develop an IBT. This will bring uniformity and better understanding between governments and their respective departments responsible for the development of IBTs.

Regionally, a good example of the adoption of IWRM is illustrated in the case study of the Lake Victoria Region Local Authorities Co-operation (LVRLAC)<sup>134</sup>. Lake Victoria is the second largest freshwater lake in the world supporting over 30 million people across three countries<sup>135</sup>. Over the years the lake has experienced decreasing water levels and degradation. For this reason the LVRLAC was founded. The LVRLAC acknowledged that these challenges cannot be dealt with in isolation. With this reasoning the LVRLAC interacted with many national government institutions, international funders and agencies. This interaction achieved environmental<sup>136</sup>, ecological, health<sup>137</sup>, sanitation, livelihood<sup>138</sup> and investment improvements in the region.<sup>139</sup> The LVRLAC case study thus highlights the importance and benefits of IWRM in relation to collaboration between many local authorities across international boundaries in an effort to reap mutual benefits.<sup>140</sup> This is the secret ingredient to the successful development of an IBT. The sooner countries and / or departments can see eye-to-eye the easier, effective and more co-ordinated the IBT becomes.

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introduced to 226 schools and many clinics. Rewarding public-private partnerships have been formed with buy-in from industries in the Durban Metro.

<sup>131</sup>Local Government and IWRM reaping the benefits Part 1. p20.

<sup>132</sup>In Umlazi, blockages over a 2 year period were reduced from 1300 to between 300 and 400/month.

Blockages throughout the Metro area have reduced by one-third over a 12 month period, equating to a saving of approximately R1.4 million.

<sup>133</sup>Local Government and IWRM reaping the benefits Part 1. p20.

<sup>134</sup> The LVRLAC which was founded in April 1997, is an initiative of the mayors of Entebbe (Uganda), Mwanza (Tanzania) and Kisumu (Kenya).

<sup>135</sup>Kenya, Tanzania and Uganda.

<sup>136</sup> Both environmental and ecological improvement has been achieved through awareness campaigns, advocacy for harmonisation of policies, seeking partnerships for strategic interventions and initiating regional campaigns.

<sup>137</sup> Health and sanitation was improved through HIV/AIDS programmes, partnerships with the Swedish International Development Cooperation Agency (SIDA) / UN-HABITAT on reduction and control measures, supporting voluntary counselling and testing centres.

<sup>138</sup>Made possible through the promotion of micro -and small enterprises, tourism and culture.

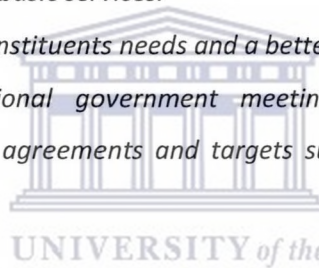
<sup>139</sup>Local Government and IWRM reaping the benefits Part 1.20.

<sup>140</sup>Local Government and IWRM reaping the benefits Part 1. 14.

It is apparent from the above case examples that IWRM is an effective tool when managing and conserving the resource.

Thus, the potential benefits associated with IWRM are, among others:

- *Improved accountability to constituents*
- *Increased co-ordination between departments*
- *More effective strategic planning*
- *Prevention and mitigation of conflicts*
- *Pro-active identification of competing demands*
- *Increased empowerment of local stakeholders*
- *Poverty alleviation*
- *Sustainable economic development*
- *Creating a healthy living environment*
- *Improving equitable access to basic services.*
- *Improved understanding of constituents needs and a better working relationship.*
- *It also contributes to national government meeting its obligations to international conventions, transboundary agreements and targets such as the Millennium Development Goals.*



It is for these reasons that local government plays a decisive role when employing effective IWRM in relation to curbing the possible negative effects of IBTs.

## 2.5 Conclusion

As seen, IWRM is an effective policy tool, especially from a freshwater perspective as it has the capability of providing alleys to minimise the negative effects that IBTs has on the hydrological regime of a watercourse. IWRM is deliberate management of water resources in order to ensure sustainable use and to conserve it for future generations.<sup>141</sup> IWRM is to be viewed as a holistic approach that aims to promote co-operative governance, empowerment, good governance and transparency.<sup>142</sup> Also, IWRM is not a means to an end, but a means in itself for the possible minimisation of the negative effects facilitated by IBTs. To summarise, 'Local government needs IWRM and IWRM needs local government' if any headway is to be made in combating the possible negative effects associated with IBTs.

<sup>141</sup>[http://www.archive.cap-net.org/iwrm\\_tutorial/1\\_3.htm](http://www.archive.cap-net.org/iwrm_tutorial/1_3.htm) (last accessed 30 March 2011).

<sup>142</sup><http://www.iwrm.co.za/> (last accessed 12 March 2011).

## CHAPTER 3

### INTERNATIONAL LAW AND POLICY GOVERNING INTER-BASIN TRANSFERS OF FRESHWATER

#### 3.1 Introduction

Globally, over 45 per cent of land falls within an international river basin and 'nearly 50 countries on four continents have more than three-quarters of their total land in international river basins'.<sup>143</sup> Further, almost 40 per cent of the world's population lives in international river basins.<sup>144</sup> Over 200 river basins are multinational, including 57 in Africa and 48 in Europe.<sup>145</sup> As has been stated, Africa is blessed with vast natural resources and is consequently cursed with a complex system of river basins; 12 river basins are currently being shared by four or more African countries. From these statistics one can understand why many shared rivers have a history of tension, are currently having tensions, or create a possibility of future cross-boundary tension. It is for this reason that various international treaties have been formulated and executed in an effort to manage and regulate the use of shared water.

At present there are no frameworks in place that specifically provide for IBTs and the management thereof. This chapter, therefore, analyses the law and policy currently regulating international watercourses as a means to adopt these principles as a tool to develop regulatory measures devoted to managing IBTs and the possible negative effects associated with it.

The international legal frameworks which these principles are derived from are: the Convention on the Law of the Non-navigational Uses of International Watercourses, 1997; Convention on Environmental Impact Assessment (EIA) in a Transboundary Context, 1991; Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992; The Helsinki Rules on the Uses of the Waters of International Rivers, 1966 and Regulation of the Flow of Water of International Watercourses, 1980. The aim is to take cognisance of the principles identified in these Conventions, adopt and apply them to the regulation and management of the negative effects associated with IBTs. These

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<sup>143</sup><http://www.arecabooks.com/webpages/books02b.html> (last accessed 20 April 2011)

<sup>144</sup>Hunter, Salzman and Zaelke 'International Environmental Law' (2002) at 774. Hereafter Hunter *et al* (2002).

<sup>145</sup>Hunter *et al* (2002) 774.



principles include equitable and reasonable utilisation; the preventative and precautionary principles; the concept of sustainable development; IWRM and environmental impact assessments (EIA).

As the concept of IBTs relate to transboundary co-operation, the role IWRM is of utmost importance as it not only facilitates co-operation but strikes a balance between maximising the desired economic resultant and sustenance of affected ecosystems. This chapter further demonstrates that these principles should remain the same when applying them to the management of IBTs and the negative impacts associated.

### **3.2 International law and policy**

#### ***3.2.1 Convention on the Law of the Non-navigational Uses of International Watercourses, 1997 (UN Convention)***

Although this Convention was the first global water law which was approved by the UN General Assembly, it has not yet been ratified. Also, this Convention is a mere framework Convention and as the title suggests, only applies to uses of international watercourses and their waters for purposes other than navigation. The Convention further sets out measures of protection, preservation and management related to the uses of those watercourses.

In terms of this Convention a “watercourse” is defined as ‘a system of surface waters and groundwater constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus’.<sup>146</sup> An “international watercourse” means ‘a watercourse, parts of which are situated in different States’.<sup>147</sup> A “watercourse State” means ‘a State Party to the present Convention in whose territory part of an international watercourse is situated, or a Party that is a regionally economic integration

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<sup>146</sup>Convention on the Law of the Non-navigational Uses of International Watercourses Article 2(a). Herein after UN Convention.

<sup>147</sup>UN Convention Article 2(b).

organisation<sup>148</sup>; in the territory of one or more of whose Member States part of an international watercourse is situated'.<sup>149</sup>

Equitable and reasonable utilization and participation is but one of the general principles of this Convention and international law in general. This principle entails that watercourse States shall equitably and reasonably utilise an international watercourse found in their territory.<sup>150</sup> If an international watercourse were to be used, the watercourse States are obliged to ensure that such usage is both optimal and sustainable and that the interests of the other watercourse States be taken into account.<sup>151</sup> Further, when watercourse States wish to utilize an international watercourse occurring in their territory, they are required to take all precautionary measures to prevent the causing of significant harm to other watercourse States.<sup>152</sup>

Moreover, an obligation rests on the watercourse States to co-operate with the aim to attain optimal utilization and protection of an international watercourse.<sup>153</sup> The bases for such co-operation are sovereign equality, territorial integrity, mutual benefit and good faith, but in order to facilitate such co-operation joint mechanisms or commissions may be implemented by the watercourse States.<sup>154</sup> Joint mechanisms or commissions support the idea that watercourse basins are 'most efficiently managed as an integrated whole' in an effort to 'secure co-operation and protection of the environment, social and economic objectives'.<sup>155</sup> Although 'equitable and reasonable utilisation' pre-dates IWRM within the environmental arena, IWRM is more recent, incorporating environmental concerns, such as, co-management, equitable utilisation and sustainable development into one.

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<sup>148</sup> "Regional economic integration organization" means 'an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it'. UN Convention Article 2 (d).

<sup>149</sup> UN Convention Article 2(c).

<sup>150</sup> UN Convention Article 5(1).

<sup>151</sup> UN Convention Article 5(1).

<sup>152</sup> UN Convention Article 7(1).

<sup>153</sup> UN Convention Article 8 (1).

<sup>154</sup> UN Convention Article 8 (1).

<sup>155</sup> Birnie *et al* (2009) 544.

Article 9 makes provision for the exchange of information<sup>156</sup> between the watercourse States should they decide to establish a joint mechanism or commission. Article 11 expresses that watercourse States must exchange information and consult one another on the possible efforts of planned measures on the condition of an international watercourse. However, before such planned measures materialise which may negatively impact on the watercourse, the watercourse State must notify the other States.<sup>157</sup> In order for the notified States to evaluate these negative effects, technical data, including results of any environmental impact assessments, must accompany the notification.<sup>158</sup> Exchange of information, consultation and notification are essential processes, especially when trying to curb the negative effects of IBTs on the environment. The RBO both the donor and receiving basins has an important role in the success of an IBT, as one of their objectives is to improve and develop regional integration.<sup>159</sup>

Once the implementation of a planned measure is agreed upon, watercourse States have the general duty (both jointly and severally) to protect and preserve the ecosystems of international watercourses.<sup>160</sup> Similarly, watercourse States must prevent, reduce and control pollution of an international watercourse which may cause significant harm to other watercourse States, their environment, human health or safety, beneficial use of the waters or the living resources of the watercourse.<sup>161</sup> Here, “pollution of an international watercourse” means ‘any detrimental alteration in the composition or quality of the waters of an international watercourse which results directly or indirectly from human conduct’.<sup>162</sup> These precautionary measures are further applicable to watercourse States to prevent the introduction of alien species into an international watercourse which may be detrimental to the ecosystems resulting in significant harm to other watercourse States.<sup>163</sup>

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<sup>156</sup> ‘information’ relates to ‘the condition of the watercourse in particular that of a hydrological, meteorological, hydrogeological and ecological nature and related to the water quality’. UN Convention Article 9 (2).

<sup>157</sup> UN Convention Article 12.

<sup>158</sup> UN Convention Article 12.

<sup>159</sup> United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000 at 55.

<sup>160</sup> UN Convention Article 20.

<sup>161</sup> UN Convention Article 21(2).

<sup>162</sup> UN Convention Article 21 (1).

<sup>163</sup> UN Convention Article 22.

The watercourse States may also establish a joint management<sup>164</sup> mechanism in order to manage an international watercourse.<sup>165</sup> Installations, facilities and other works occurring in their territory and related to an international watercourse must be maintained and protected by the watercourse States.<sup>166</sup> Moreover, all appropriate measures in relation to an international watercourse shall be taken both jointly and severally by the watercourse States to prevent and/or mitigate harmful conditions resulting from natural causes or human conduct<sup>167</sup> .<sup>168</sup>

### **3.2.2 Convention on Environmental Impact Assessment (EIA) in a Transboundary Context, 1991 (Convention on EIA)**

The Convention defines an EIA as ‘a national procedure for evaluating the likely impact of a proposed activity on the environment’.<sup>169</sup> The Convention further defines an “impact” to mean:

*any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors.*<sup>170</sup>

A “transboundary impact”, on the other hand, entails any impact, ‘not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party’.<sup>171</sup>

To be noted is that although this Convention is only applicable in Europe, what is important in relation to this study are the general provisions which the Convention enforces against all

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<sup>164</sup> ‘Management’ refers to:

‘(a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted and

(b) Otherwise promoting the rational and optimal utilisation, protection and control of the watercourse’. UN Convention Article 24 (2).

<sup>165</sup> UN Convention Article 24 (1).

<sup>166</sup> UN Convention Article 26 (1).

<sup>167</sup> These may include: floods, ice conditions, water-borne diseases, erosion, droughts or desertification.

<sup>168</sup> UN Convention Article 27.

<sup>169</sup> Convention on EIA Article 1 (vi).

<sup>170</sup> Convention on EIA Article 1 (vii).

<sup>171</sup> Convention on EIA Article 1 (viii).

the Parties. The first and perhaps most important provision which the Convention provides for is the preventative or precautionary principle. Article 2 (1) provides that all Parties shall either unilaterally or jointly take all appropriate and effective measures with the aim of preventing, reducing and controlling significant adverse transboundary environmental impact from proposed activities. These 'appropriate and effective measures' include the establishment of an EIA procedure which Parties should implement in respect of a proposed activity which is likely to cause a significant adverse transboundary impact.<sup>172</sup> The Convention makes it clear that an EIA is to be conducted prior to any decision authorising a proposed activity which is likely to cause a significant adverse transboundary impact.<sup>173</sup> Public participation<sup>174</sup>, notification<sup>175</sup> and consultation<sup>176</sup> with potentially affected parties are key components when conducting an EIA. The Convention also makes provision for bilateral and multilateral agreements in terms of affirming the general provisions of this Convention.<sup>177</sup>

The reason for mentioning and discussing this Convention is because it could possibly be the bases for establishing a regional standard of conducting EIAs in SADC. The importance of establishing a regional standard will be advocated for, below.

### **3.2.3 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992 (Convention on International Lakes)**

This Convention makes it clear that the protection of transboundary waters, coupled with the existence and threats of adverse effects on an international watercourse, are of vital importance and being such cannot be dealt with unilaterally or in isolation but only in an

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<sup>172</sup>Convention on EIA Article 2 (2).

<sup>173</sup>Convention on EIA Article 2 (3).

<sup>174</sup> Article 2 (6) stipulates that 'The Party of origin shall provide, in accordance with the provisions of this Convention, an opportunity to the public in the areas likely to be affected to participate in relevant environmental impact assessment procedures regarding proposed activities and shall ensure that the opportunity provided to the public of the affected Party is equivalent to that provided to the public of the Party of origin'.

<sup>175</sup> Article 2 (4) further provides '...the provisions of this Convention, ensure that affected Parties are notified of a proposed activity listed in Appendix I that is likely to cause a significant adverse transboundary impact'

<sup>176</sup> According to Article 2 (5) 'Concerned Parties shall, at the initiative of any such Party, enter into discussions on whether one or more proposed activities not listed in Appendix I is or are likely to cause a significant adverse transboundary impact and thus should be treated as if it or they were so listed. Where those Parties so agree, the activity or activities shall be thus treated'.

<sup>177</sup>Convention on EIA Article 8.

enhanced effort of co-operation.<sup>178</sup> As mentioned, “transboundary waters” means ‘any surface or ground waters which mark, cross or are located on boundaries between two or more States’.<sup>179</sup> A “transboundary impact”, however, refers to ‘any significant adverse effect on the environment resulting from a change in the conditions of transboundary waters caused by a human activity’.<sup>180</sup>

The general provisions of the Convention relevant to the purpose of this discussion relate first, to the usage of the transboundary water. Parties to the Convention must take all appropriate measures to ensure that the transboundary waters are used with the aim of an ‘ecologically sound and rational water management, conservation of water resources and environmental protection’.<sup>181</sup> Further, they must be used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause transboundary impact’.<sup>182</sup> Secondly, the provisions relate to measures that must be taken in order to mitigate, eliminate or deter transboundary impacts.

These measures include the precautionary principle; the polluter pays principle<sup>183</sup> as well as the sustainable development concept.

The precautionary principle is essentially a ‘response of the uncertainty, in the face of risks to health or the environment’.<sup>184</sup> In general, ‘it involves acting to avoid serious or irreversible potential harm, despite lack of scientific certainty as to the likelihood, magnitude, or causation of that harm’.<sup>185</sup> Article 5 (a) specifically mentions the precautionary principle in terms of negating transboundary harm arising from hazardous substances. What the Convention reiterates is that even though science does not fully prove that there is no link between the hazardous substances and the transboundary impact, precaution is better than cure. The precautionary principle overlaps with the preventative principle which is based on the idea ‘that it is better to prevent environmental damage than to employ measures to

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<sup>178</sup> Preamble of the Convention on International Lakes.

<sup>179</sup> Convention on International Lakes Article 1 (1).

<sup>180</sup> Convention on International Lakes Article 1 (2).

<sup>181</sup> Convention on International Lakes Article 2 (2) (b).

<sup>182</sup> Convention on International Lakes Article 2 (2) (c).

<sup>183</sup> Found in Article 2 (5) (b) of the Convention on International Lakes.

<sup>184</sup> [http://www.pprinciple.net/the\\_precautionary\\_principle.html](http://www.pprinciple.net/the_precautionary_principle.html) (last accessed 5 May 2011 2010).

<sup>185</sup> [http://www.pprinciple.net/the\\_precautionary\\_principle.html](http://www.pprinciple.net/the_precautionary_principle.html) (last accessed 5 May 2011 2010).

restore the environment thereafter'<sup>186</sup>, and which by virtue is actually an expansion of the precautionary principle.<sup>187</sup>

The polluter pays principle, on the other hand, requires that the person who was in charge of polluting activities is to be financially responsible for the damage caused.<sup>188</sup> The principle was developed in order to 'encourage rational use of scarce environmental resources'.<sup>189</sup>

Sustainable development is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.<sup>190</sup> It is through this concept that Article 2(5)(c) expresses how water resources must be managed.

The Convention then continues by specifically making provision for bilateral and multilateral agreements to co-manage the catchment areas in an integrated effort to prevent, control and reduce the transboundary impact and protect the environment and transboundary waters.<sup>191</sup> These agreements thus establish joint bodies<sup>192</sup> which must *inter alia*: 'elaborate joint monitoring programmes concerning water quality and quantity'<sup>193</sup>, 'serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact'<sup>194</sup> and 'participate in the implementation of environmental impact assessments relating to transboundary waters'<sup>195</sup>. The purpose of these bilateral and multilateral agreements is to convey to the Parties that even more stringent measures can be taken, in addition to the ones outlined as a joint effort, to protect, prevent, reduce, deter and control transboundary impacts.

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<sup>186</sup>Louka (2006) 50.

<sup>187</sup>Louka (2006) 50.

<sup>188</sup>Louka (2006) 51.

<sup>189</sup>Kiss and Sheldon (2004) 213.

<sup>190</sup>Hunter *et al*/180.

<sup>191</sup>Helsinki Rules Article 2 (6).

<sup>192</sup>In terms of Article 1 (5) of the Convention on International Lakes, a 'joint body' means 'any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties'.

<sup>193</sup>Helsinki Rules Article 9 (2) (b).

<sup>194</sup>Helsinki Rules Article 9 (2) (h).

<sup>195</sup>Helsinki Rules Article 9 (2) (j).

### 3.2.4 The Helsinki Rules on the Uses of the Waters of International Rivers<sup>196</sup>, 1966

#### *(Helsinki Rules)*

The general focus of the Helsinki Rules is on the use of the waters of an international drainage basin.<sup>197</sup> An international drainage basin refers to:

*a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.*<sup>198</sup>

The Helsinki Rules also refer to a 'basin State' which means a 'State the territory of which includes a portion of an international drainage basin'.<sup>199</sup>

The relevance of the Helsinki Rules is to be found in its chapter 2. This chapter deals with the equitable utilisation of the waters of an international drainage basin. As seen above, equitable utilisation is the cornerstone of successful international agreements, especially when there is a possibility of achieving mutual benefits. From the outset the chapter makes it clear that basin States (within their territories) are entitled to a 'reasonable and equitable share in the beneficial uses of the waters of an international drainage basin'.<sup>200</sup> What constitutes a 'reasonable and equitable share' is to be determined by a host of factors<sup>201</sup> relevant to each individual case.

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<sup>196</sup> Adopted by the International Law Association at the 52<sup>nd</sup> Conference, held at Helsinki in August 1966.

<sup>197</sup> Helsinki Rules Article 1.

<sup>198</sup> Article 2 of the Helsinki Rules.

<sup>199</sup> Helsinki Rules Article 3.

<sup>200</sup> Helsinki Rules Article 4.

<sup>201</sup> Article 5 (2) of the Helsinki Rules states relevant factors which are to be considered include, but are not limited to:

1. The geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
2. The hydrology of the basin, including in particular the contribution of water by each basin State;
3. The climate affecting the basin;
4. The past utilization of the waters of the basin, including in particular existing utilization;
5. The economic and social needs of each basin State;
6. The population dependent on the waters of the basin in each basin State;
7. The comparative costs of alternative means of satisfying the economic and social needs of each basin State;
8. The availability of other resources;
9. The avoidance of unnecessary waste in the utilization of waters of the basin;
10. The practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and



The Helsinki Rules continue by referring to factors that are non-desirable when continuing an existing reasonable use<sup>202</sup>.<sup>203</sup> In relation to the aim of this thesis, one could infer from the aforementioned that if the negative impacts (as mentioned in the previous chapter) outweigh the development of an IBT, then either the IBT has to undergo modification or the idea to construct one has to be terminated. This illustrates the aim of this thesis, i.e. to improve existing policy tools (IWRM and IRBM) in order to effectively manage these negative impacts so as prevent the termination of an IBT.

### **3.2.5 Regulation of the Flow of Water of International Watercourses, 1980**

For the purposes of this instrument 'regulation' means:

*continuing measures intended for controlling, moderating, increasing or otherwise modifying the flow of the waters in an international watercourse for any purpose; such measures may include storing, releasing and diverting of water by means such as dams, reservoirs, barrages and canals.*<sup>204</sup>

Once again, equitable utilisation is at the forefront of this international instrument stating that basin States will co-operate (where appropriate, jointly) in good faith and neighbourliness in preparing plans for regulation, taking into consideration the principle of equitable utilisation.<sup>205</sup> Further, when basin States decide to undertake a joint regulation, then a joint commission or agency must be established and authorised to manage all aspects of the regulation.<sup>206</sup> However, regulation of an international watercourse may not substantially injure other States'unless those states are assured the enjoyment of the beneficial uses to which they are entitled under the principle of equitable utilization'.<sup>207</sup>

Once again, as this is a regional instrument, although not specifically binding in SADC, what should be taken note of is how a watercourse is regulated in relation to an IBT.

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11. The degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State'.

<sup>202</sup> An existing reasonable use may continue in operation unless the factors justifying its continuance are outweighed by other factors leading to the conclusion that it be modified or terminated so as to accommodate a competing incompatible use.

<sup>203</sup> Helsinki Rules Article 8.

<sup>204</sup> Regulation of the Flow of Water of International Watercourses Article 1.

<sup>205</sup> Regulation of the Flow of Water of International Watercourses Article 2.

<sup>206</sup> Regulation of the Flow of Water of International Watercourses Article 3.

<sup>207</sup> Regulation of the Flow of Water of International Watercourses Article 6.

### 3.3 Policy and Law in the SADC Region

#### 3.3.1 *The Revised Protocol on Shared Watercourse Systems in the Southern Africa Development Community (SADC) region 2003 (SADC Protocol)*

The SADC Protocol takes cognisance of the Helsinki Rules as well as the Convention on the Law of the Non-navigational Uses of International Watercourses discussed above.<sup>208</sup> It also recognises the relevant provisions of Agenda 21 of the United Nations Conference on Environment and Development.<sup>209</sup> It is due to the above-mentioned Conventions that the SADC Protocol is based on the principle of equitable and reasonable utilisation of a watercourse system.

A “watercourse system” means *the inter-related hydrologic components of a drainage basin such as streams, rivers, lakes, canals and underground water which constitute a unitary whole by virtue of their physical relationship.*<sup>210</sup>

Article 2 (1) stipulates that the utilisation of the shared watercourse systems will be open to each basin or riparian State<sup>211</sup> within the SADC Region. The Protocol further reminds the Member States that they are to abide by and respect the existing international rules, whether general or customary relating to the utilisation and management of the resources of shared watercourse systems.<sup>212</sup> The environmental security issue is addressed in Article 2 (3) which calls for a ‘proper balance between resource development for a higher standard of living for their peoples and conservation and enhancement of the environment to promote sustainable development’.

This means that once human activity (i.e. the development of IBTs) interferes with a watercourse, a duty rests on us to maintain and ensure that those ecosystems are not dramatically disrupted.<sup>213</sup>

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<sup>208</sup>Preamble SADC Protocol.

<sup>209</sup>Preamble SADC Protocol.

<sup>210</sup>Article 1 (1) of the SADC Protocol.

<sup>211</sup>‘Riparian State’ means ‘a State through whose territory or along whose border a watercourse passes’.SADC Protocol Article 1.

<sup>212</sup>SADC Protocol Article 2 (2).

<sup>213</sup>Tevera and Moyo (2000) 160.

The SADC Protocol further calls for Member States to maintain close co-operation 'with regard to the study and execution of all projects likely to have an effect on the regime of the watercourse system'.<sup>214</sup> It goes on to encourage regional co-operation by providing for the exchange of available information regarding, among others, water quality and ecological conditioning of a watercourse system.<sup>215</sup> This provision refers to the management of a watercourse. What this provision seeks to achieve is working together as a collective whole in order to mutually benefit, rather than scavenging unilaterally for scarce resources.<sup>216</sup>

As one of the underlying principles of the SADC Protocol is equitable utilisation, Member States are required to use a shared watercourse system in an equitable manner with the aim of obtaining and maintaining optimum utilisation thereof.<sup>217</sup> As seen in the Helsinki Rules there are certain factors taken into account when determining equitable utilisation in terms of this Protocol. These factors include 'the social and economic needs of the member States concerned and the effects of the use of a shared watercourse system in one watercourse state on another watercourse state'.<sup>218</sup>

The SADC Protocol is also mindful that the protection of the watercourse itself as well as of its ecosystem is of utmost importance and concern. The Protocol specifically mentions that the introduction of alien species must be prevented from detrimentally affecting the shared watercourse and ecosystem.<sup>219</sup> Also, the Protocol makes provision for 'related installations, facilities and other works' which are or would be established on the shared watercourse and how these should be used in a peaceful manner.<sup>220</sup> However, the Protocol does not specifically mention IBTs but generally alludes to them i.e. 'related installations, facilities and other works'. This thus means that should the construction of an IBT take place, and then it should be developed, used and managed in a peaceful way as between the donor and receiving State.

What the Protocol does however achieve and specifically refer to, is the establishment of River Basin Management Institutions and their objectives and functions. This is of

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<sup>214</sup>SADC Protocol Article 2 (4).

<sup>215</sup>SADC Protocol Article 2 (5).

<sup>216</sup>Tevera and Moyo (2000) 161.

<sup>217</sup>SADC Protocol Article 2 (6).

<sup>218</sup>SADC Protocol Article 2 (7).

<sup>219</sup>SADC Protocol Article 2 (11).

<sup>220</sup>SADC Protocol Article 2 (11).

significance as the international instruments merely make provision for the establishment of 'joint mechanisms or commissions'<sup>221</sup> or 'agencies'<sup>222</sup> but never goes into detail as to what the duties and functions of these institutions entail. Within the SADC Protocol, River Basin Management Institutions have four objectives, namely:

*(a) To develop a monitoring policy for shared watercourse systems;*

*(b) To promote the equitable utilisation of shared watercourse systems;*

*(c) To formulate strategies for the development of shared water course systems;*

*(d) To monitor the execution of integrated water resource development plans in shared watercourse systems.*

The functions of these institutions span five main themes namely: National Water Resources Policies and Legislation; Research, Information and Data Handling; Water Control and Utilisation in Shared Watercourse Systems; Environmental Protection and Hydrometeorological Monitoring Programme. These functions must, however, be accomplished in consultation with watercourse States in an integrated effort to achieve the objectives of River Basin Management Institution.

With regard to National Water Resources Policies and Legislation, there has to be harmonisation of national water resources policies and legislation<sup>223</sup> and monitoring compliance with water resource legislation.<sup>224</sup> This has a significant legal impact because the SADC Protocol can only be effective if it is incorporated into the national law of a country. Harmonisation, therefore, goes hand-in-hand with the measure of Water Control and Utilisation in Shared Watercourse Systems. Member States should, among others, assist and communicate in a collaborative way all information and data relevant to the development of resources within a shared watercourse system.<sup>225</sup> Member States must monitor the utilisation of agriculture domestic, industrial and navigational purposes, the establishment of hydro-electric power installations and the generation of hydro-electric power.<sup>226</sup> This

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<sup>221</sup>UN Convention on the Law of the Non-navigational Uses of International Watercourses Article 8 (1).

<sup>222</sup>Regulation of the Flow of Water of International Watercourses Article 3.

<sup>223</sup>SADC Protocol Article 5 (a) (i).

<sup>224</sup> SADC Protocol Article 5 (a) (ii).

<sup>225</sup>SADC Protocol Article 5 (b) (i).

<sup>226</sup>SADC Protocol Article 5 (c).

means that once an IBT has been developed, the respective States have the obligation to monitor the IBT and communicate (whether it is to the receiving RBO or the donning RBO) information relating to any possible changes, new developments or anything ancillary regarding the IBT.

Further, in terms of Environmental Protection, measures are to be taken to prevent environmental degradation as a result of using the resource of a shared watercourse system.

Thus, integrated co-operation is explicit and at the heart of effective management of a shared watercourse. It is on this base that both bilateral and multilateral agreements within the region have proven successful in an effort to effectively manage their respective water resource.

### **3.4 Bilateral and Multilateral Agreements within the SADC Region**

#### **3.4.1 *Treaty on the Lesotho Highlands Water Project (LHWP) between the Government of the Republic of South Africa and the Government of the Kingdom of Lesotho***

As Lesotho is one of the poorest countries in Africa, land-locked and surrounded by South Africa, it can be understood why its economy is mostly dependent on South Africa as a source of income and employment.<sup>227</sup> Lesotho's geographical land area is mountainous and thus not suited for agricultural practices, which meant that only a fraction<sup>228</sup> of its water resources were being utilised while the excess water ran through South Africa and into sea.

In the 1980's the Gauteng province, which is the industrial heartland of South Africa was experiencing a prolonged water shortage. As result the LHWP<sup>229</sup> was proposed as the least-cost solution to alleviate Gauteng's water demand problem. It was contemplated that the

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<sup>227</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWAT/0,,contentMDK:21881576~menuPK:5544500~pagePK:210058~piPK:210062~theSitePK:4602123,00.html> (last accessed 23 May 2011).

<sup>228</sup> Less than 6 percent of its water was consumed domestically.

<sup>229</sup> The LHWP was divided into four phases for its completion. The Treaty committed both countries to implement the first phase (which was further divided into phase 1A and 1B) in 1990 while the remaining three phases were left open for negotiations and have until 2020 to be implemented. Project phase 1A saw a dam built at Katse in the central Maluti Mountains, and a 82km transfer and delivery tunnel system reaching to the Ash River across the border in South Africa and a hydropower station and associated structures have been completed.

IBT would consist of a series of tunnels and dams redirecting the initial excess of water to the Gauteng province. Specifically, the water leaving Lesotho in the Senqu and Orange Rivers would be redirected to the Vaal River Basin in Gauteng.<sup>230</sup> On 24 October 1986 Lesotho and South Africa signed the Water Treaty, establishing the Joint Permanent Technical Commission (JPTC) with the aim of aiding the two countries in the implementation of the LHWP as well as its operation.<sup>231</sup> The JPTC comprises representatives of both governments and is responsible for ensuring that:

- (i) the project is efficiently implemented and operated,*
- (ii) that funds expended by Lesotho Highlands Development Authority (LHDA) for the implementation of the water transfer component qualify as costs for reimbursement under the Treaty,*
- (iii) that the agreed quantities of water will be delivered to RSA according to the established time schedule.*<sup>232</sup>

The main aim of the Treaty is to transport a substantial amount of water from Lesotho in order to alleviate South Africa's (specifically Gauteng's) water shortage.<sup>233</sup>

The objectives of this phase are:

- (a) for Lesotho to earn export revenues from the sale of water to South Africa;*
- (b) to produce hydropower for Lesotho;*
- (c) use the export revenues for development-oriented programs;*
- (d) safeguard environmental and compensation aspects;*
- (e) ensure dam safety and emergency preparedness;*
- (f) and prepare for later construction phases of the LHWP*

Phase 1B, on the other hand, was implemented from 1998 to 2006 and although it continued the objectives of Phase 1A, it also focused on mitigating any adverse social and

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<sup>230</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWAT/0,,contentMDK:21881576~menuPK:5544500~pagePK:210058~piPK:210062~theSitePK:4602123,00.html> (last accessed 23 May 2011).

<sup>231</sup> <http://www.lhwp.org.ls/overview/overview.htm> (last accessed 23 May 2011).

<sup>232</sup> Document of the World Bank Report No. 17727-Lso Project Appraisal Document on a Proposed Loan in the Amount of US \$45 Million to the Lesotho Highlands Development Authority for Lesotho Highlands Water Project- Phase 1B. April 30, 1998. 3-4. (Herein after Document of the World Bank Report).

<sup>233</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWAT/0,,contentMDK:21881576~menuPK:5544500~pagePK:210058~piPK:210062~theSitePK:4602123,00.html> (last accessed 23 May 2011).

environmental impacts caused due to the IBT.<sup>234</sup> Phase 1B included the development of the Mohale dam<sup>235</sup>, the Mochaletunnel<sup>236</sup> and the Katse reservoirs.<sup>237</sup>

Throughout both phases the JPTC played the role of middle-man bearing in mind the interests of both countries, while the Lesotho Highlands Development Authority was responsible for executing project activities in Lesotho and its counterpart agency in South Africa was the Trans Caledon Tunnel Authority.<sup>238</sup>

The main benefits of Phase 1A and 1B include:

- a) Lesotho's population, the poor in particular benefit from revenues derived from royalties which South Africa will pay for importing the water. These revenues are, in part, to be deposited into the Lesotho Highlands Water Revenue Fund to support community development projects in Lesotho.<sup>239</sup>
- b) During the construction phase of the project, further benefits accrued to Lesotho nationals, including about 3000 project workers and Basotho contractors.<sup>240</sup>
- c) Benefit to industrial and urban water users in the Gauteng region of South Africa. As the Project was the least-cost solution for the provision of water to Gauteng. In terms of the

<sup>234</sup> [http://siteresources.worldbank.org/INTWAT/Resources/4602114-1203518899290/FS12\\_lesotho.pdf](http://siteresources.worldbank.org/INTWAT/Resources/4602114-1203518899290/FS12_lesotho.pdf) (accessed 23 May 2011).

<sup>235</sup> 'Mohale Dam is a concrete-faced rock-fill embankment 145 metres high. It is built on the confluence of the Senqunyane arid Likalaneng rivers that drain into the Senqu River. A total concrete volume of 100 thousand cubic metres and a volume of 7.2 million cubic metres of rock-fill have been used on completion of construction, making Mohale Dam the highest of its type in Africa and one of the top ten highest such dams in the world. The dam creates a reservoir storage capacity of over 950 million cubic centimetres of water. It has a crest length of 600 metres and is 12 metres thick at the crest'. Sourced from <http://www.lhwp.org.ls/engineering/phase1b/default.htm> (last accessed 23 May 2011).

<sup>236</sup> 'Mohale Tunnel provides for an approximately 32km long water conveyance tunnel through the mountain massif separating the Senqunyane catchment from the Malibamatso catchment, so connecting the Mohale Reservoir to the Katse Reservoir. The tunnel is tunnel boring machine (TBM) driven predominantly through basalt on two headings. The unlined intake drive averages 5.1m internal diameter while outlet drive is approximately 4.9m in diameter. Pre-cast concrete segmental lining is applied to protect basalt gradation and the final internal diameter of the lined tunnel will be approximately 4.2m. Available at <http://www.lhwp.org.ls/engineering/phase1b/default.htm> (last accessed 23 May 2011).

<sup>237</sup> <http://www.lhwp.org.ls/engineering/phase1b/default.htm> (last accessed 23 May 2011).

<sup>238</sup> [http://siteresources.worldbank.org/INTWAT/Resources/4602114-1203518899290/FS12\\_lesotho.pdf](http://siteresources.worldbank.org/INTWAT/Resources/4602114-1203518899290/FS12_lesotho.pdf) (accessed 23 May 2011).

<sup>239</sup> Results Report on the LHWP 4.

<sup>240</sup> Results Report on the LHWP 4.

ProjectTreaty, approximately 44% of the cost savings between LHWP and the next-lowest-costalternative was estimated to accrue to water users in Gauteng.<sup>241</sup>

d) Although the local Highland communities suffered losses (for which they received compensation) they benefit from new roads providing better access and from health services and other rural development activities, including, agriculture, range management, forestry, fisheries and tourism.<sup>242</sup>

It is to be noted that the LHWP was the biggest water transfer project in the SADC region at the time and that it is 'one of the most comprehensive engineering projects of its kind in the world'<sup>243</sup>. Although it is proving to be both successful and beneficial, many lessons can be learnt from phases 1A and 1B which will help improve the development of the impending phases and any future transfer schemes.

These lessons include:

a) Environmental issues need to be effectively managed in an integrated way when developing an IBT and should be considered in a basin-wide framework.<sup>244</sup>

b) Monitoring and evaluating of large-scale water transfers to ensure that data-collecting be consistent, reported in a timeous manner and incorporated into the decision making process. Phases 1A and 1B found that effective data management systems improve integration, adaptationand the decision process.<sup>245</sup>

c) The establishment of expert panels provides an impartial mechanism facilitating expert input into implementation, particularly important in joint international projects, and contributes to capacity building and the transfer of knowledge.<sup>246</sup>

d) Lessons learnt from constructing the Mohale dam include concreteslabs and joint design, quarrying techniques; rock fill layering, construction sequencing; and materials testing. These have already been applied internationally, as in the case of the construction of the 198m high Kárahnjúkar dam in Iceland.<sup>247</sup>

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<sup>241</sup> Results Report on the LHWP 4.

<sup>242</sup> Results Report on the LHWP 4.

<sup>243</sup> <http://www.lhwp.org.ls/overview/overview.htm>(last accessed 23 May 2011).

<sup>244</sup> Results Report on the LHWP 25.

<sup>245</sup> Results Report on the LHWP 25.

<sup>246</sup> Results Report on the LHWP 26.

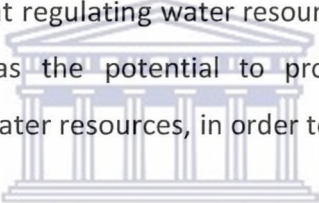
<sup>247</sup> Results Report on the LHWP p26.



e) Joint developments of international water resources, which has been successfully practised in the LHWP, has led to socio-political benefits and co-operation.<sup>248</sup>

f) The Lesotho and South African governments considered the participation of the World Bank to be of significant importance especially in the procurement of international support.<sup>249</sup>

Since the success of the LHWP a host of other bilateral and multilateral agreements have been negotiated and implemented in the SADC region in order to co-manage the respective water resources. Those to be noted are: the Agreement between the Government of the Republic of South Africa and the Government of the Republic of Namibia on the Establishment of a Permanent Water Commission (PWC), 1992; the Agreement for the Establishment of the Orange-Senqu River Commission (ORASECOM) between Botswana, Lesotho, Namibia, South Africa, 2000; and the Agreement between Angola, Botswana and Namibia to establish the Permanent Okavango River Basin Commission (OKACOM), 1994. As these Agreements are all aimed at regulating water resources within SADC, IBTs become an important mechanism, as it has the potential to promote regional integration and harmonisation of the scattered water resources, in order to reap mutual benefits within the region.



**3.4.2 Agreement between the Government of the Republic of South Africa and the Government of the Republic of Namibia on the Establishment of a Permanent Water Commission (PWC) 1992**

The Preamble to this Agreement provides that both States are 'desirous of establishing a tradition of good neighbourliness and co-operation' between them. Both States are also conscious that water resources are scarce and therefore, development of mutual projects is important as they will contribute to the well-being of their peoples.

Article 1 thus establishes the Permanent Water Commission (the Commission) which will have advisory duties pertaining to the development and utilisation of water resources of common interest to the Parties. The functions<sup>250</sup> and powers of the Commission include:

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<sup>248</sup> With at least 34 of Africa's rivers shared by two or more countries, such lessons are particularly relevant to maximizing opportunities for poverty alleviation through economic growth and development of the continent's water resources.

<sup>249</sup> Results Report on the LHWP 26.

(a) measures and arrangements to determine the potential of the water resources available from rivers of common interest;

(b) the reasonable demand for water from common water resources;

(c) the criteria to be adopted in the allocation and utilisation of common water resources;

(d) investigations, separately or jointly by the Parties, related to the development of any water resource of common interest including the construction, operation and maintenance of any water works in connection therewith;

(e) the prevention of and control over the pollution of common water resources and soil erosion affecting such resources; and

(f) measures that can be implemented by either or both Parties to alleviate short-term problems resulting from water shortages in any river of common interest to the Parties during periods of drought, taking into consideration the availability of stored water and the water requirements within the territories of the respective Parties at that time;

This Agreement further emphasises, that, States within SADC must co-manage the water resources of the region if it is to be sustained and secured.

### **3.4.3 The Agreement for the Establishment of the Orange-Senqu River Commission (ORASECOM) between Botswana, Lesotho, Namibia, South Africa (ORASECOM AGREEMENT) 2000**

This Agreement and its Commission were of the first to be established after the ratification of the SADC Protocol.<sup>251</sup> It is, therefore, no surprise that the Agreement recognises the Helsinki Rules, the UN Convention and the Revised SADC Protocol.<sup>252</sup>

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<sup>250</sup> Agreement between the Government of the Republic of Namibia and the Government of the Republic of South Africa on the Establishment of a Permanent Water Commission. Article 3. Available at <http://www.internationalwaterlaw.org/documents/regionaldocs/nambia-southafrica.html> (last accessed 24 May 2011).

<sup>251</sup> <http://www.orangesenqu.com/governance/water+governance+orange+senqu+basi/orasecom+agreement.aspx> (last accessed 25 May 2011).

<sup>252</sup> Preamble of the Agreement for the Establishment of the Orange-Senqu River Commission (ORASECOM) between Botswana, Lesotho, Namibia, South Africa. Available at <http://www.orangesenqu.com/governance/water+governance+orange+senqu+basi/orasecom+agreement.aspx> (last accessed 25 May 2011).

However, the significance of the establishment of this Commission is not because it identifies pertinent water resource problems (as the other bilateral and multilateral agreements do) but rather that it caters for improved regional integration based on IWRM principles.<sup>253</sup> What should be kept in mind is that this Agreement gives effect to and forms the bases of the Revised SADC Protocol and the UN Convention on the Non-Navigational Uses of International Watercourses. This being the case, Article 7 sets out the obligations of the States and verbatim<sup>254</sup> repeats the general provisions of both the UN Convention and the revised SADC Protocol. Again, one has to understand the purpose of the ORASECOM Agreement, which is to strengthen regional integration. This is done by establishing a Council which is the highest body of the Commission.<sup>255</sup> The Council consists of four Delegations, one from each State.<sup>256</sup> Moreover, Article 2.4 provides that:

*One of the permanent members in the delegation of each Party shall be designated by the Party concerned as the leader of its delegation and shall be a co-chairperson at Council meetings.*

This is done as a means to prevent a situation that would lead to one delegation dominating the Council. Council is further required to act as technical advisor on matters relating to the development, utilisation and conservation of the water resources in the River System.<sup>257</sup> The Council may, importantly, make recommendations regarding, *inter alia*,<sup>258</sup> the 'equitable

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<sup>254</sup> Article 7.2 ORASECOM Agreement reads:

'The Parties shall, in their respective territories, utilise the resources of the River System in an equitable and reasonable manner with a view to attaining optimal and sustainable utilisation thereof, and benefits therefrom, consistent with adequate protection of the River System' and Article 2 of the UN Convention provides:

'Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse'.

Article 2 (6) of the Revised SADC Protocol states: 'Member States shall utilise a shared watercourse system in an equitable manner. In particular, a shared watercourse system shall be used and developed by member States with a view to attaining optimum utilisation thereof and obtaining benefits therefrom consistent with adequate protection of the watercourse system'.

<sup>255</sup> Article 2.2 ORASECOM Agreement.

<sup>256</sup> Article 2.3 ORASECOM Agreement.

<sup>257</sup> Article 4 ORASECOM Agreement.

<sup>258</sup> According to Article 5 ORASECOM Agreement:

5.2.1 Measures and arrangements to determine the long-term safe yield of the water sources in the River System;

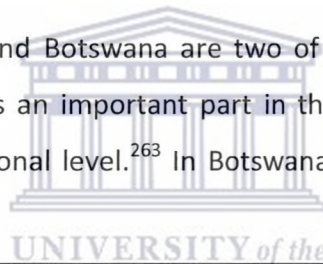
5.2.2 the equitable and reasonable utilisation of the water sources in the River System to support sustainable development in the territory of each Party;

and reasonable utilisation of the water sources in the River System'.<sup>259</sup> As a result of the establishment of the Council, and in the light of its objectives, functions, powers and ultimate purpose, three principles underlie the ORASECOM Agreement, namely:

- a) ORASECOM is limited to an advisory and recommending role to Member States, but may undertake studies that enable it to develop and provide viable recommendations;<sup>260</sup>
- b) The discretion to implement these recommendations remains with the Member States, and ORASECOM's actions should not undermine this discretion<sup>261</sup>; and
- c) Member States may assign functions to ORASECOM, but the Council (as a collection of Delegations from Member States) may not be able to assign these functions to itself.<sup>262</sup>

#### **3.4.4 Agreement between Angola, Botswana and Namibia to establish the Permanent Okavango River Basin Commission (OKACOM Agreement) 1994**

Bearing in mind that Namibia and Botswana are two of the driest countries in Southern Africa; the Okavango River plays an important part in the lives of local populations living along the river as well as at national level.<sup>263</sup> In Botswana, it is the water resources which



- 5.2.3 the investigations and studies conducted separately or jointly by the Parties, with regard to the development of the River System, including any project or the construction, operation and maintenance of any water works;
- 5.2.4 the extent to which the inhabitants in the territory of each Party concerned shall participate in respect of the planning, development, utilisation, protection and conservation of the River System, as well as the harmonisation of policies in that regard and the possible impact on the social, cultural, economic and natural environment;
- 5.2.5 the standardised form of collecting, processing and disseminating data or information with regard to all aspects of the River System;
- 5.2.6 the prevention of the pollution of water resources and the control over aquatic weeds in the River System;
- 5.2.7 contingency plans and measures for responding to emergency situations or harmful conditions resulting from natural causes such as droughts and floods, or from human conduct such as industrial accidents,
- 5.2.8 the regular exchange of information and consultation on the possible effects of planned measures;
- 5.2.9 measures with a view to arriving at a settlement of a dispute between two or more of the Parties; and
- 5.2.10 such other matters as may be determined by the Parties'.

<sup>259</sup> Article 5 ORASECOM Agreement.

<sup>260</sup> [www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf](http://www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf) (last accessed 25 May 2011).

<sup>261</sup> [www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf](http://www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf) (last accessed 25 May 2011).

<sup>262</sup> [www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf](http://www.inweb.qr/twm4/abs/QUIBELL%20Gavin.pdf) (last accessed 25 May 2011).

<sup>263</sup> <http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

attract tourists and is the second largest foreign currency earner next to mining.<sup>264</sup> The Okavango River is of utmost and strategic importance as it supports both animals and humans.<sup>265</sup> Similarly, in Namibia, the Okavango River (or 'Kavango River', as it is commonly known in the region) supports both animal and human life forms through ecosystem goods and services.<sup>266</sup> As a whole the Okavango Delta (which is the largest inland delta in the world) is viewed as having a rich biological diversity and has, therefore, been internationally recognized as a site of ecological importance<sup>267</sup>.<sup>268</sup>

The OKACOM Agreement was established as a response to curb and/or minimise the negative impacts on the Okavango river system 'while assuring satisfaction of the legitimate social and economic needs of the riparian states'.<sup>269</sup> The three States signed this Agreement as a means to co-manage the Okavango basin in a collective way.<sup>270</sup> This is of significance as these States realised that without one another, the valuable resource of water will be and with that, their economic and social well-being which is dependent upon the resource. What this illustrates, is that the management of IBTs will run smoother, if the SADC States, through the respective RBO, acknowledge and respect, that regional integration and co-management play a key role to economic development and revitalised water resources.

With regard to the ORASECOM Agreement, the OKACOM acts as an advisory body on matters relating to conservation, development and utilisation of water resources which are of mutual benefit.<sup>271</sup> The OKACOM's purpose, however, is to 'anticipate and reduce unintended, unacceptable and often unnecessary impacts that occur due to uncoordinated resources development'.<sup>272</sup> When compared to the ORASECO, the OKACOM's purposes are clearly different. Under the ORASECOM Agreement the Commission's purpose was to strengthen regional integration, while the OKACOM Agreement and its Commissions aims to minimise a specific water related problem. Due to the different purpose for which this

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<sup>264</sup><http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

<sup>265</sup><http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

<sup>266</sup><http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

<sup>267</sup>It has, as a result, been declared a RAMSAR site as a wetland of international importance. The Convention on Wetlands (Ramsar, Iran, 1971) (Ramsar Convention).

<sup>268</sup>[www.unep.org/bpsp/tourism/.../botswana%20\(tourism\)](http://www.unep.org/bpsp/tourism/.../botswana%20(tourism)) (last accessed 25 May 2011).

<sup>269</sup><http://www.icp-confluence-sadc.org/rbo64> (last accessed 25 May 2011).

<sup>270</sup><http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

<sup>271</sup>Agreement between Angola, Botswana and Namibia to establish the Permanent Okavango River Basin Commission (OKACOM) Article 1.2.

<sup>272</sup><http://www.icp-confluence-sadc.org/rbo64> (last accessed 25 May 2011).

Commission has been established, a viable and better a co-ordinated approach needed to be implemented in order to stay true to its purpose of minimising the negative impacts of the river system. The adopted approach came in the form of equitable allocation, sustainable utilisation, sound environmental management and the sharing of benefits.<sup>273</sup> The Commission's functions<sup>274</sup> thus gave the Agreement its legal responsibility.<sup>275</sup>

### 3.5 Conclusion

This chapter sought to illustrate that although there are no international, regional or national instruments in place which regulate IBTs and the negative impacts associated with them, the general provisions and underlying principles set forth regulating international watercourses can be used for that purpose.

From an international perspective, the principle of 'equitable and reasonable utilisation' of an international watercourse, the preventative and precautionary principles and the concept of sustainable development are widely accepted. However, the principle of IWRM is the most important for understanding how States can work in a collaborative way to achieve mutual benefits of shared water resources. IWRM is prevalent in all the instruments (examined above) as they provide for 'joint mechanisms or Commissions'. These Commissions thus provide the incentive needed for States, specifically in the SADC region, to work as a collective if any mutual benefits relating to water resources are to be realised. It needs to be borne in mind that the international instruments merely make provision for these Commissions to be established and do not provide any detail as to what their functions, duties, objectives or powers are.

Regionally, however, the SADC Protocol not only specifically makes provision for the establishment of River Basin Management Institutions but provides for their functions and

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<sup>273</sup> OKACOM Agreement Article 4.3

<sup>274</sup> Article 4 OKACOM Agreement:

'4.1 Determine the long term safe yield of the river basin.

4.2 Estimate reasonable demand from the consumers.

4.3 Prepare criteria for conservation, equitable allocation and sustainable utilisation of water.

4.4 Conduct investigations related to water infrastructure.

4.5 Recommend pollution prevention measures.

4.6 Develop measures for the alleviation of short term difficulties, such as temporary droughts'.

<sup>275</sup> <http://www.okacom.org/okacom.htm> (last accessed 25 May 2011).

objectives, too. This is of significance as it gives sustenance and effect to the principle of IWRM and the idea of co-management or integrated management of shared water resources within the SADC region.

Furthermore, the River Basin Management Institutions or River Basin Organisations (RBOs) serve the same purpose and function as the joint mechanisms or Commissions which the international Conventions provide for. Thus, watercourse basins are 'most efficiently managed as an integrated whole' in an effort to 'secure co-operation and protection of the environment, social and economic objectives'.<sup>276</sup> These RBOs or Commissions thus provide the backbone to IBTs and the management thereof. RBOs play a significant role in 'promoting, co-ordinating and implementing development programmes and projects in their respective basin areas'.<sup>277</sup> It is on this basis that the establishment of bilateral and multilateral agreements serves as a mechanism to encourage more States within the SADC region to adopt an integrated approach with a view to effectively manage shared water resources.



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<sup>276</sup>Birnie *et al* (2009) 544.

<sup>277</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. 57.

## CHAPTER 4

### NATIONAL LAW AND POLICY OF STATES IN THE SADC REGION

#### 4.1 Introduction

South Africa, Namibia, Botswana and Zimbabwe are seen as the four most economically developed countries in the SADC region. That being the case, this chapter investigates whether these SADC States have individually adopted policy and regulatory measures with a view to manage the negative impacts which occur as a result of IBTs. As a point of departure, these States will be individually examined to determine what they have done thus far with regard to managing these negative impacts. The starting point to this examination is to analyse the Constitution<sup>278</sup> of each State to determine whether it provides for the protection of the environment in general and then to determine whether there are any national Acts or policies which not only give effect to such protection but make specific provision for managing the negative impacts created through IBTs. A Determination will then be made as to whether these policies and regulatory measures are effective.

#### 4.2 South Africa

##### 4.2.1 Constitutional requirement for environmental protection in South Africa

The Constitution<sup>279</sup> is the supreme law of the country and any law inconsistent with it is invalid.<sup>280</sup> The environmental right is provided for in section 24 which reads: Everyone has the right:

- (a) to an environment that is not harmful to their health or well-being; and*
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-*
  - (i) prevent pollution and ecological degradation;*
  - (ii) promote conservation; and*
  - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

<sup>278</sup> I will use the Constitution as the starting point to this investigation because it is the supreme law and all Acts must be consistent herewith.

<sup>279</sup> Act No. 108 of 1996 .

<sup>280</sup> Constitution of the Republic of South Africa Act 108 of 1996, s2. Herein after Act 108 of 1996.



Not only does the Constitution recognise the importance of the environment to be protected generally, it also provides for 'reasonable legislative and other measures' that may be implemented so as to give further effect to this right. These 'reasonable legislative and other measures' are already operational in the form of the National Environmental Management Act<sup>281</sup> (NEMA); the Biodiversity Act<sup>282</sup> and the National Water Act<sup>283</sup>. These Acts will be discussed next as a means to determine whether they provide regulatory measures with a view to manage the negative impacts which occur as a result of IBTs.

#### **4.2.2 The National Environmental Management Act (NEMA)**

According to NEMA, development must be 'socially, environmentally and economically sustainable'.<sup>284</sup> Sustainable development requires all relevant factors to be taken into account, including: that the disturbance of ecosystems and biological diversity is to be avoided; and that if such avoidance is not possible, that the risk of disturbance be minimised and thus remedied<sup>285</sup>; and that 'negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented are minimised and remedied'.<sup>286</sup>

Chapter 5 of NEMA promotes the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.<sup>287</sup> The general objectives with regard to such management includes: to promote integration of environmental management principles into the decision making process which may affect the environment in a significant way.<sup>288</sup> These principles include: identifying, predicting and evaluating both actual and potential impacts on the environment, the risks, consequences, alternatives and options for mitigation of activities, with a view to not only minimise the negative impacts but to maximise benefits and promote compliance with these principles, too.<sup>289</sup> Moreover, adequate consideration is needed before action is taken on the

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<sup>281</sup> Act 107 of 1998.

<sup>282</sup> Act 10 of 2004.

<sup>283</sup> Act 36 of 1998.

<sup>284</sup> NEMA s2 (3).

<sup>285</sup> NEMA s2 (4)(a)(i).

<sup>286</sup> NEMA s 2 (4)(a)(viii).

<sup>287</sup> NEMA s23 (1).

<sup>288</sup> NEMA s23 (2)(a).

<sup>289</sup> NEMA s23 (2)(b).

environment to ensure that the effects thereof are provided for.<sup>290</sup> Public participation is also an important factor and principle especially if the environment may be affected.<sup>291</sup>

In the same breath NEMA provides for the duty of care and remediation of environmental damage. Section 28(1) states:

*Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.*

This subsection imposes an obligation to take reasonable measures<sup>292</sup> on, for example, an owner of land or premises, a person in control of land or premises or a person who has a right to use the land or premises on which or in which -

(a) any activity or process is or was performed or undertaken; or

(b) any other situation exists, which causes has caused or is likely to cause significant pollution or degradation of the environment.<sup>293</sup>

It is essential that holders adhere to this environmental duty of care provision in order to protect the environment.



Additional protection is granted in respect of certain listed activities for which EIA are required that are governed by the Regulations as published in terms of NEMA. These Regulations refer to *inter alia* the construction of facilities or infrastructure for the transfer of water from, between or to water catchments, water treatment works or impoundments. Moreover, an EIA has to be performed where the construction of canals, channels and infrastructure or structures covers 50 square metres or more occurring within a watercourse or 32 metres of a watercourse. An additional EIA is required in respect of

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<sup>290</sup> NEMA s23 (2)(c).

<sup>291</sup> NEMA s23 (2)(d).

<sup>292</sup> The measures required in terms of ss(1) may include measures to:

(a) investigate, assess and evaluate the impact on the environment:

(b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment

(c) cease, modify or control any act, activity or process causing the pollution or degradation;

(d) contain or prevent the movement of pollutants or the causant of degradation:

(e) eliminate any source of the pollution or degradation: or

(f) remedy the effects of the pollution or degradation'.

<sup>293</sup> NEMA s28 (2).

expansions of these infrastructures and structures.<sup>294</sup> These EIA Regulations of NEMA are of great significance as all IBTs will have to undergo an EIA before construction can take place.

#### 4.2.3 The Biodiversity Act

The Biodiversity Act provides for the management and conservation of South Africa's biodiversity within the framework of NEMA. Chapter 5 (section 64) specifically deals with species and organisms posing potential threats to biodiversity. The purpose of chapter 5, according to section 64 (1), include:

*(a) to prevent the unauthorized introduction and spread of alien species and 15 invasive species of ecosystems and habitats where they do not naturally occur;*

*(6) to manage and control alien species and invasive species to prevent or minimize harm to the environment and to biodiversity in particular;*

*(c) to eradicate alien species and invasive species from ecosystems and habitats where they may harm such ecosystems or habitats.*

Thus, before an IBT can be developed, the person(s) undertaking such an activity must take appropriate steps to ensure prevention, mitigation, control and / or eradication of alien and invasive species having an impact on the environment.

Also, according to section 65, a person may not carry out a restricted activity involving a specimen<sup>295</sup> of an alien species<sup>296</sup> without a permit.<sup>297</sup> However, such permit may only be

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<sup>294</sup>Regulation 544, dated 18 June 2010, Activity 11.

<sup>295</sup>A 'specimen' in terms of the Biodiversity Act s1 means:

'(a) any living or dead animal, plant or other organism;

(b) a seed, egg, gamete or propagule or part of an animal, plant or other organism capable of propagation or reproduction or in any way transferring genetic traits;

(c) any derivative of any animal, plant or other organism; or

(d) any goods which-

(i) contain a derivative of an animal, plant or other organism; or

(ii) from an accompanying document, from the packaging or mark or label, or from any other indications, appear to be or to contain a derivative of an animal, plant or other organism'.

<sup>296</sup>'alien species' in terms of the Biodiversity Act s1 means:

'(a) a species that is not an indigenous species; or

(b) an indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by natural means of migration or dispersal without human intervention'.

<sup>297</sup>Biodiversity Act s65 (1).

issued once a prescribed assessment of risks and potential impacts on biodiversity has been carried out.<sup>298</sup> The Minister may, however, exempt any alien species and, thus, any person who wishes to carry out a restricted activity relating to an exempted alien species need not acquire a permit.<sup>299</sup> The Minister may further publish a list of alien species in respect of which a permit may not be issued.<sup>300</sup>

A person who is authorised by a permit to perform a restricted activity involving a specimen of an alien species has a duty of care to ensure, firstly, compliance with the conditions under which the permit has been issued, and, secondly, that all required steps to prevent or minimise harm to biodiversity have been taken.<sup>301</sup> Similarly, when IBTs are undertaken, there is a duty of care to ensure that the introduction of alien species is prevented or minimised. If, however, a person fails to comply with such duty of care, then a competent authority may direct that person(s) to take such steps as may be necessary to remedy any harm to biodiversity caused by the actions of that person(s) and as may be specified in the directive.<sup>302</sup> Further, if this directive is not complied with, then a competent authority may implement the directive and recover from that person(s) all costs incurred by the competent authority in implementing the directive.<sup>303</sup> Moreover, if an alien species becomes invasive due to the actions of a specific person(s), then a competent authority may hold such person(s) liable for any costs relating to the control or eradication of that species.<sup>304</sup>

As regards invasive species, the Minister must publish a list specifying the invasive species.<sup>305</sup> Once this list has been published, any person who wants to carry out a restricted activity involving such listed species must acquire a permit. Such permit, again, is subject to a prescribed assessment of risks and potential impacts on biodiversity.<sup>306</sup>

Once again, a duty of care is required if a person obtains a permit authorising a restricted activity to be carried out on a listed invasive species.<sup>307</sup> Such a person(s) must take all the

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<sup>298</sup> Biodiversity Act s65(2).

<sup>299</sup> Biodiversity Act s66.

<sup>300</sup> Biodiversity Act s67.

<sup>301</sup> Biodiversity Act s69(1).

<sup>302</sup> Biodiversity Act s69(2).

<sup>303</sup> Biodiversity Act s69(3).

<sup>304</sup> Biodiversity Act s69(4).

<sup>305</sup> Biodiversity Act s70.

<sup>306</sup> Biodiversity Act s71 (2).

<sup>307</sup> Biodiversity Act s73.

required and appropriate steps to prevent or minimise harm to biodiversity.<sup>308</sup> An owner of land on which a listed invasive species occurs must:

*(a) notify any relevant competent authority, in writing, of the listed invasive occurring on that land;*

*(b) take steps to control and eradicate the listed invasive species and to prevent it from spreading and*

*(c) take all the required steps to prevent or minimise harm to biodiversity.<sup>309</sup>*

As is the case with alien species, if the person(s) fails to take these precautionary steps, then a competent authority may direct such person(s) to take such steps as may be necessary to remedy any harm to biodiversity caused by (a) 'the actions of that person'; or (b) the 'occurrence of the listed invasive species on land of which that person is the owner'.<sup>310</sup> If that person fails to comply with a directive<sup>311</sup>, then a competent authority may 'implement the directive and recover all costs reasonably incurred by a competent authority in implementing the directive either from that person or proportionally from that person and any other person who benefited from the implementation of the directive'.<sup>312</sup> According to section 75(1), the control and eradication of a listed invasive species must be carried out by methods<sup>313</sup> appropriate for both the invasive species and the environment. Although the Minister has the overall responsibility to 'ensure the coordination and implementation of programmes for the prevention, control or eradication of invasive species'<sup>314</sup>, all organs of state in all spheres of government must 'prepare an invasive species monitoring, control and eradication plan for land under their control, as part of their environmental plan'.<sup>315</sup> The municipalities in particular must have invasive species monitoring, control and eradication

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<sup>308</sup> Biodiversity Act s73(1).

<sup>309</sup> Biodiversity Act s73(2).

<sup>310</sup> Biodiversity Act s73(3).

<sup>311</sup> In terms of s74 of the Biodiversity Act:

'Any person may request a competent authority, in writing, to issue a directive in terms of section 73(3). A competent authority must reply to the request, in writing, within 30 days of request. Should a competent authority fail to respond to the request within the requested period or refuses the request, the person who made the request may apply to a court for an order directing that competent authority to issue the directive'.

<sup>312</sup> Biodiversity Act s73(4).

<sup>313</sup> The methods employed to control and eradicate a listed invasive species 'must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regeneration or re-establishing itself in any manner'. S75 (3) Biodiversity Act.

<sup>314</sup> Biodiversity Act s75(4).

<sup>315</sup> Biodiversity Act s76 (2).

plans as part of their integrated development plans.<sup>316</sup> The content of an invasive species monitoring, control and eradication plan must include:

*(a) a detailed list and description of any listed invasive species occurring on the relevant land*

*(b) a description of the parts of that land that are infested with such listed invasive*

*(c) an assessment of the extent of such infestation;*

*(d) a status report on the efficacy of previous control and eradication measures;*

*(e) the current measures to monitor, control and eradicate such invasive species;*

*(f) measurable indicators of progress and success, and indications of when the relevant land.<sup>317</sup>*

The issuing of permits for both listed alien and invasive species is still dependent on whether:

*(a) adequate procedures have been followed by the applicant to assess the risks and potential impacts associated with the restricted activity;*

*(b) the relevant species has been found to have negligible or no invasive potential;*

*(c) the benefits of allowing the activity are significantly greater than the costs associated with preventing or remedying any resultant damage to the environment*

*(d) it is satisfied that adequate measures have been taken by the applicant to prevent the escape and spread of the species and potential impacts associated with the restricted activity.<sup>318</sup>*

Thus, as previously stated, the overall purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of NEMA. The Biodiversity Act, more importantly however, provides regulation mechanisms for the protection, control and eradication of both alien and invasive species.

#### **4.2.4 The National Water Act**

The purpose of the National Water Act is to ensure that water resources within the country are protected, used, developed, conserved, managed and controlled in ways which take into

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<sup>316</sup>Biodiversity Act s76 (2) (b).

<sup>317</sup>Biodiversity Act s76 (4).

<sup>318</sup>Biodiversity Act s91.

account certain factors, including: promoting the efficient, sustainable and beneficial use of water in the public interest, facilitating social and economic development; providing for the growing demand for water use; and protecting aquatic and associated ecosystems and their biological diversity.<sup>319</sup> As it is the public trustee of the nation's water, the National Government, acting through the Minister, has the power to regulate the use, flow and control of all water in the country.<sup>320</sup> In doing so, the Minister has to develop and establish a national water resource strategy which is the framework needed to give effect to the purpose (specifically the protection of water resources) of this Act.<sup>321</sup> The national water resource strategy also provides the framework within which water resources will be managed at a regional or catchment level in specified water management areas<sup>322</sup> by providing for inter-catchment water transfers between surplus water management areas and deficit water management areas.<sup>323</sup>

In order to meet these objectives, the Act has several innovative features. The first is the Catchment Management Agencies. Catchment management must be carried out in accordance with the national water resource strategy which determines how the nation's water resources are to be protected, used, developed, conserved, managed and controlled. The strategy is intended to set out the strategies, objectives, plans, guidelines and procedures of the Minister and institutional arrangements relating to the protection, use, development, conservation, management and control of water resources within the framework of existing relevant government policy.

The water resources classification system is the following feature. This involves the determination of the class of the water resource and the relevant resource quality objectives. The determination is relevant to the notion of the Reserve. The Reserve entails to satisfy basic human needs by securing basic water supply, as prescribed under the Water Services Act for people who are now or who will, in the near future, be

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<sup>319</sup> National Water Act s2.

<sup>320</sup> National Water Act s3.

<sup>321</sup> National Water Act s5 (3).

<sup>322</sup> National Water Act s1 defines a 'water management area' as 'an area established as a management unit in the national water resource strategy within which a catchment management agency will conduct the protection, use, development, conservation, management and control of water resources'.

<sup>323</sup> National Water Act s6 (g).

*i) relying upon;*

*(ii) taking water from; or*

*(iii) being supplied from, the relevant water resource: and*

*(b) to protect aquatic ecosystems in order to secure ecologically sustainable development and use of the relevant water resource.<sup>324</sup>*

Pending a final determination of the Reserve, the Act provides for a preliminary determination, which is a necessary prerequisite for the authorisation of a water use. Section 21 defines a water use which include:

*a) taking water from a water resource*

*b) storing water:*

*c) impeding or diverting the flow of water in a watercourse:*

*d) engaging in a stream flow reduction activity contemplated in section 36;*

*e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)*

*f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit*

IBTs would thus constitute a 'water use' as this is taking water from a water resource. 'Water use' is widely defined by the Act to not only include 'use' of water but also activities that could have an adverse impact on water resources. An innovative feature of the Act is the licencing system. The Act provides that a person wishing to use water must be licenced to do so, except in three situations-

The first exception pertains to the uses of water that are likely to have sufficiently insignificant impacts on water resources.<sup>325</sup> The second exception applies if the water use is a continuation of an existing lawful use.<sup>326</sup> The third exception relates to water use being permissible in terms of a general authorisation.<sup>327</sup> Although the Act sets out detailed

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<sup>324</sup> The National Water Act s1

<sup>325</sup> The National Water Act s22 (1) (a) (i).

<sup>326</sup> The National Water Act s22 (1) (a) (ii).

<sup>327</sup> The National Water Act s22 (1) (a) (iii).



provisions relating to licencing and the ancillary procedures, the Act specifically provides for compulsory licencing. A compulsory licence will only be required if:

*the water resource within a specific geographic area is to achieve a fair allocation of water from a water resource, which is under stress or when it is necessary to review prevailing water use to achieve equity in allocation, to promote beneficial use in the public interest to facilitate efficient management of the water resource or to protect water resource quality.*<sup>328</sup>

Thus, the role and impact of the water licencing system is first, to regulate water use, and second, to possibly curb any negative impacts from occurring on the water resource.

The Act further incorporates various institutions which include the catchment management agencies which are used to decentralise management from the national departments to various management areas throughout the country. The Water User Associations, not designed to carry out water management functions but to 'operate at a restricted localised level, and are in effect co-operative associations of individuals water uses who wish to undertake water-related activities for their mutual benefit'. Advisory Committees which perform primary functions and the water tribunal which handles dispute resolutions. Lastly, the Act has enforcement measures in place which criminalises several activities including failure to comply with the conditions attached to permitted water uses and water pollution. A maximum penalty is a fine or five years imprisonment and compensation is offered by a court to any person who suffered loss resulting from non-compliance of the Act.<sup>329</sup> This combination of innovations reiterates the importance and benefits of IWRM.

Moreover, the National Water Act allows the Minister to regulate activities which may have a detrimental effect on a water resource by declaring them to be controlled activities. Such activities have already been defined by the Act and include:

*(a) irrigation of any land with waste or water containing waste generated through any industrial activity or by a waterwork;*

*(b) an activity aimed at the modification of atmospheric precipitation;*

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<sup>328</sup>The National Water Act s43.

<sup>329</sup>The National Water Act s151.

(c) a power generation activity which alters the flow regime of a water resource;

(d) intentional recharging of an aquifer with any waste or water containing waste.<sup>330</sup>

Also, in terms of section 38 the Minister may declare other activities (such as an IBT) to be controlled as he may deem fit, provided that the public participates in the decision making process. The National Water Act continues by providing the Minister with the power to establish, construct, alter, repair or control and operate government waterworks with the aim of protecting, using, developing, conserving, managing and controlling water resources which are in the public interest and to their benefit.<sup>331</sup> As an IBT falls within the scope of a “waterwork”, the regulation thereof, pertaining to protecting, using, developing, conserving, managing and control, also applies to IBTs.

From the outset, it is clear that South Africa adopted and applies IWRM to ensure that the water resources within the country are protected, used, developed, conserved, managed and controlled.

### 4.3 Namibia

#### 4.3.1 Constitutional requirement for environmental protection in Namibia

Although the Namibian Constitution does not specifically provide for an environmental right, as in the South African Constitution, what it does provide for is for the ‘maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future...’.<sup>332</sup> An obligation is placed on the State to promote and maintain the welfare of Namibians by adopting such policies in relation to, among others, the environment.<sup>333</sup>

The Ombudsman<sup>334</sup> is also charged with the ‘duty to investigate complaints concerning the over-utilization of living natural resources, the irrational exploitation of non-renewable

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<sup>330</sup>The National Water Act s37 (1).

<sup>331</sup>The National Water Act s109.

<sup>332</sup>Namibian Constitution Article 95 (l).

<sup>333</sup>Constitution of Namibia, Article 95.

<sup>334</sup>The Ombudsman is an official, usually appointed by the government or by parliament, who is charged with representing the interests of the public by investigating and addressing complaints reported by individual citizens. [www.thefreedictionary.com/ombudsman](http://www.thefreedictionary.com/ombudsman) (last accessed 2 July 2011).

resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia’.

#### **4.3.2 The Environmental Management Act<sup>335</sup>**

The Environmental Management Act is an important tool in terms of environmental protection within Namibia. The overall purpose of this Act, among others, is to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment. The Act thus gives effect to Article 95 (l) of the Constitution by establishing general principles for the management of the environment and natural resources. The objectives of this Act are to prevent and mitigate the significant effects of activities on the environment, and this is done by:

*(a) ensuring that the significant effects of activities on the environment are considered in time and carefully;*

*(b) ensuring that there are opportunities for timeous participation of interested and affected parties throughout the assessment process; and*

*(c) ensuring that the findings of an assessment are taken into account before any decision is made in respect of activities.<sup>336</sup>*

However, the principles<sup>337</sup> of environmental management should also be taken into consideration when determining the prevention and/or mitigation of an activity that has an impact on the environment. More importantly, the Act provides for EIAs<sup>338</sup> and

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<sup>335</sup> Act 7 of 2007.

<sup>336</sup> Environmental Management Act, s2.

<sup>337</sup> In terms of the Environmental Management Act s3, the following are the principles of environmental management in Namibia which include:

‘(h) the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term must be adopted to reduce the generation of waste and polluting substances at source;

(i) the reduction, re-use and recycling of waste must be promoted;

(j) a person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage;

(k) where there is sufficient evidence which establishes that there are threats of serious or irreversible damage to the environment, lack of full scientific certainty may not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and

(l) damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled’.

<sup>338</sup> Environmental Management Act Part VIII.

consultations<sup>339</sup> with communities and relevant regional and local authorities to monitor the development of projects that potentially have an impact on the environment.<sup>340</sup> The significance of this is that interested and affected parties have to be given an opportunity to participate in environmental assessments whenever government institutions or private persons are planning any activity likely to have a significant effect on the environment.<sup>341</sup>

To ensure that these environmental principles are adhered to, certain administrative measures, such as, the necessity of environmental clearance certificates<sup>342</sup> and environmental assessments, were introduced. The activities as listed in section 27 (2)<sup>343</sup> may not be authorised without an environmental clearance certificate and the Environmental Commissioner<sup>344</sup> may further instruct that an environmental assessment be carried out. Environmental assessments are conducted in order to:

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<sup>339</sup> Environmental Management Act s44.

<sup>340</sup> Ruppel, 'Foundations, Sources and Implications of National Environmental Law' in Ruppel and Ruppel-Schlichting (eds) *Environmental Law and Policy in Namibia* (2011). 84. (Hereinafter *Ruppel et al/2011*).

<sup>341</sup> Environmental Management Act s44 (1) (b).

<sup>342</sup> 'environmental clearance certificate' means 'an environmental clearance certificate issued in terms of section 34 or 37, authorising a listed activity to be undertaken'.

<sup>343</sup> In terms of the Environmental Management Act, activities listed, under s27(1), may include activities in respect of any of the following areas -

- (a) land use and transformation;
- (b) water use and disposal;
- (c) resource removal, including natural living resources;
- (d) resource renewal;
- (e) agricultural processes;
- (f) industrial processes;
- (g) transportation;
- (h) energy generation and distribution;
- (i) waste and sewage disposal; chemical treatment;
- (j) recreation; and
- (k) any other area which the Minister considers necessary for the purpose of listing'.

<sup>344</sup> The functions of the Environmental Commissioner in terms of s17 of the Environmental Management Act is to :

- (a) advise organs of state on the preparation of environmental plans;
- (b) receive and record applications for environmental clearance certificates;
- (c) determine whether a listed activity requires an assessment;
- (d) determine the scope, procedure and methods of an assessment;
- (e) review the assessment report in accordance with this Act;
- (f) issue environmental clearance certificates in terms of this Act;
- (g) maintain a register of environmental assessments undertaken in terms of this Act;
- (h) maintain a register of environmental clearance certificates issued and environmental plans approved in terms of this Act;
- (i) conduct inspections for monitoring compliance with this Act; and
- (j) perform any other duty or function which the Minister may assign or prescribe'.

- (a) ensure that activities which may have a significant effect on the environment follow the principles of environmental management planning and development process;*
- (b) analyse the possible environmental impacts of activities, and look at ways to decrease negative impact and increase positive ones;*
- (c) make sure that the environmental effects of activities are given adequate consideration before the activities are carried out; and to*
- (d) provide an opportunity for public participation in considering the environmental impact of a project.*<sup>345</sup>

Therefore, if a person wishes to develop an IBT, an environmental assessment must be undertaken to ensure that whatever effects the IBTs might have on the environment will be minimised or prevented.

Moreover, a person who wishes to develop an IBT has to undertake a vigorous and thorough application procedure<sup>346</sup> to ensure first, that the IBT will not cause significant and irreversible environmental harm, and second, that such activity is duly authorised. This is an important procedure as it sees to it that an application is made to a competent authority and that this authority forwards the application to the Environmental Commissioner. The Environmental Commissioner then has the important role of consulting with all persons interested and affected before making their decision to either grant such application or not. Although the Environmental Commissioner is tasked to decide such applications the Commissioner's decision may be subject to appeal to the Minister of Environment and Tourism.<sup>347</sup>

Another mechanism aimed at giving effect to the objectives of this Act is the environmental plan as contemplated in Part 6. The purpose of the environmental plan is to better coordinate and harmonise the environmental policies, plans, programmes and decisions of the various organs of state that exercise functions that may affect the environment.<sup>348</sup> Organs of state which exercise functions that may affect the environment should make environmental

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<sup>345</sup>Ruppelet *al* (2011) 86.

<sup>346</sup>The applicant(s) has to fulfil ss32-37.

<sup>347</sup>Environmental Management Act s50.

<sup>348</sup>Environmental Management Act s23 (a).

plans in order to minimise the duplication of procedures and functions<sup>349</sup> and to promote consistency in the exercise of functions that may affect the environment.<sup>350</sup>

#### **4.3.3 The Namibia Water Corporation Act<sup>351</sup>**

The Namibia Water Corporation Limited was established under the Namibia Water Corporation Act. This Act established a public company or corporation (also to be known as 'NamWater') to provide for the more efficient use and control of water resources, and to provide for matters incidental thereto. The objectives of NamWater are:

- (a) supplying bulk water to customers, in sufficient quantities, of a quality suitable for the customers' purposes, and by cost-effective, environmentally sound and sustainable means; which is the main purpose of the company, and<sup>352</sup>
- (b) the secondary business of rendering water-related services, supplying facilities and granting rights to customers upon their request.<sup>353</sup>

The supplying of water in bulk is relevant to IBTs as the purpose of an IBT is to transport water in bulk. As the mandate of NamWater is to supply the citizens of Namibia with water through cost-effective and environmentally sustainable means, if need be, the development of an IBT would satisfy both elements of obtaining bulk water.

The functions of NamWater are to be performed in the pursuit of its objectives, which include: the exploration, development and management water resources for the purpose of water supply; to acquire, plan, design, construct, extend, alter, maintain, repair, operate, control and dispose of waterworks; and to perform any other function as may be necessary or expedient for the achievement of the Corporation's objects.<sup>354</sup>

NamWater has a further duty to conserve and protect its water resources by utilizing the water resources available to it on a long-term sustainable basis; and to take appropriate steps, 'including the employment of trained and competent personnel, appropriate technology and supervision of procedures to ensure that those water resources are

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<sup>349</sup> Environmental Management Act s23 (a) (i).

<sup>350</sup> Environmental Management Act s23 (a) (ii).

<sup>351</sup> Act 12 of 1997.

<sup>352</sup> Namibia Water Corporation Act s 5(a).

<sup>353</sup> Namibia Water Corporation Act s5 (b).

<sup>354</sup> Namibia Water Corporation Act s 6.

protected from pollution caused by its operations'.<sup>355</sup> A duty of care is also placed on NamWater to take appropriate steps to conserve and protect the environment from damage, destruction or degradation and, among others, to protect the flora and fauna, and geological and physiographical features of special interest.<sup>356</sup>

#### 4.4 Botswana

##### 4.4.1 Constitutional requirement for environmental protection in Botswana

Although Botswana is party to a host of international and regional environmental agreements<sup>357</sup>, it does not have an environmental constitutional norm as the cases in both South Africa and Namibia.<sup>358</sup> This, however, does not mean that Botswana does not recognise the importance of the environment. Since, Botswana is signatory to a host of international and regional human rights agreements that have environmental protection concerns.<sup>359</sup> It has adopted various pieces of legislation and policies with the aim of, among others, protecting, conserving and sustainably using the environment. In the same vein Vision 2016 states that:

*By the year 2016, economic growth and development in Botswana will be sustainable. Renewable resources will be used at a rate that is in balance with their regeneration capacity. Non-renewable resources such as minerals will be used efficiently, and their depletion will be balanced by enhanced physical and labour*

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<sup>355</sup>Namibia Water Corporation Act s 11.

<sup>356</sup>Namibia Water Corporation Act s 12.

<sup>357</sup>The Convention on Wetlands of International Importance (Ramsar Convention 1971); the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES, 1973); the Convention on Biological Diversity (1992); the Climate Change Convention (1992); the Kyoto Protocol to UN Framework on Climate Change; the Vienna Convention for the Protection of the Ozone Layer (1985); the Montreal Protocol of Substances that deplete the Ozone Layer (1987) the UN Convention to Combat Desertification (1994); the Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal (1989) the Permanent Okavango River Basin Agreement (1994); and the SADC Protocol on Wildlife Conservation and Law Enforcement (1999).

<sup>358</sup>Seventh International Conference on Environmental Compliance and Enforcement 9-15 April. D, Rubidiri Implementation of International Environmental Agreements: The Case of Botswana 239. (Hereinafter, Conference on Environmental Compliance and Enforcement) available at: [www.inece.org/conference/7/vol1/39\\_Rubadiri.pdf](http://www.inece.org/conference/7/vol1/39_Rubadiri.pdf) (last accessed 18 July 2011).

<sup>359</sup>Conference on Environmental Compliance and Enforcement 239.

*capital. There will be a fully integrated approach towards conservation and development.*<sup>360</sup>

This shows that Botswana has taken cognisance of the importance of the environment in general. It further illustrates that Botswana will take measures in order to foster, among others, the protection and conservation of the environment in general. The most prominent instrument in terms of curbing the negative impacts of IBTs is the Environmental Impact Assessment (EIA) Act<sup>361</sup> which will now be examined.

#### **4.4.2 Environmental Impact Assessment (EIA) Act (EIA Act)**

The purpose of the EIA Act is:

*to provide for environmental impact assessment to be used to assess the potential effects of planned developmental activities; to determine and to provide mitigation measures<sup>362</sup> for effects of such activities as may have a significant adverse impact on the environment; to put in place a monitoring process and evaluation of the environmental impacts of implemented activities; and to provide for matters incidental to the foregoing.*

The Minister may screen<sup>363</sup> certain activities and thereafter prescribe them to regulation.<sup>364</sup>

This regulation prescribes:

*(a) a list of activities which are likely to cause significant adverse effects on the environment, or the locations that may be environmentally sensitive, in respect of which a statement shall be mandatory;*

*(b) threshold determinations of environmental impact assessment with respect to the activities prescribed under paragraph (a); and*

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<sup>360</sup>Presidential Task Group on a Long Term Vision for Botswana, 1997 8.

<sup>361</sup>Act No. 6 of 2005.

<sup>362</sup>In terms of s1 of the EIA Act 'mitigation measures' means: the reduction or control of the adverse environmental impact of an activity and includes restitution for any damage to the environment caused by such activity through engineering works, technological improvements, management measures or compensation to ameliorate any loss suffered by a person.

<sup>363</sup>'Screening' according to s3 (3) EIA Act means: an initial stage in the environmental impact assessment process where the Minister determines whether an activity should be subjected to an environmental impact assessment or not.

<sup>364</sup>EIA Act s3.



(c) criteria which shall be used to determine the likely effects of a proposed activity in order to further determine whether or not a statement is required for the activity.<sup>365</sup>

The Act further states that no person will either undertake or implement an activity unless an EIA has been conducted and authority has been given to undertake or implement such activity.<sup>366</sup> Authority will only be granted if the person who wants to undertake or implement an activity satisfies the competent authority with a statement that clearly:

(a) identifies the environmental impact likely to be caused<sup>367</sup>, and

(b) states that the mitigation measures as provided for in the statement to prevent or minimise the potential adverse environmental impact, are effective and sufficient<sup>368</sup>

Botswana, just like South Africa and Namibia, provides that when a person wants to undertake an activity, such as an IBT, then an EIA is essential if the proposed activity is to be developed. If the person fails to satisfy the competent authority with such statement, then the competent authority may reject such development.<sup>369</sup> Moreover, where a person undertakes an IBT without an EIA and or authority, that person is liable to a fine<sup>370</sup> or to a term of imprisonment not exceeding two years or to both.<sup>371</sup> Similarly, if it is found that the IBT affected the environment in a negative way, that person will be liable to rehabilitate<sup>372</sup> the area so affected.<sup>373</sup>

The Act further deals with methods for assessing impacts and alternatives.<sup>374</sup> Botswana is one of the few countries in SADC to specify the need for a strategic environmental assessment<sup>375</sup> for certain policies, plans and programmes.<sup>376</sup>

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<sup>365</sup>EIA Act s3 (1).

<sup>366</sup>EIA Act s4.

<sup>367</sup> EIA Act s14 (a)(i).

<sup>368</sup> EIA Act s14 (a)(ii)..

<sup>369</sup>EIA Act s14 (c).

<sup>370</sup> Not exceeding P100, 000.

<sup>371</sup>EIA Act s4 (2).

<sup>372</sup> According to s4 (4) EIA Act 'rehabilitate' means 'the reinstatement or restoration to a normal or functional environmental state'.

<sup>373</sup>EIA Act s4 (3).

<sup>374</sup> EIA Act Part II.

<sup>375</sup> According to s1 EIA Act 'strategic environmental assessment' means 'a process for evaluating the environmental consequences of proposed policy, plan, or programme initiatives in order to ensure that they are fully included and appropriately addressed at the earliest stage of decision making, on par with economic and social considerations'.

<sup>376</sup>EIA Act s6 (b).

It is of further significance that an applicant who wishes to implement or undertake an IBT must seek the views of the people who are likely to be affected by the proposed activity.<sup>377</sup> The Act further provides for a post-EIA of implemented IBTs.<sup>378</sup> The Act places a duty on the relevant authority, both during and after implementation of an activity, to monitor the implementation of the activity to determine compliance with the stated mitigation measures.<sup>379</sup>

Impressively enough, this Act specifically provides for transboundary issues. It states that where a proposed activity is likely to have a significant adverse environmental impact in another country, the Ministers of Foreign Affairs must communicate, by sending terms of reference, a statement or any other relevant information to his/her counterpart in the potentially affected country.<sup>380</sup> This provision states that when the relevant authority so asks, the developer must submit an evaluation report,<sup>381</sup> and that the competent authority must also carry out environmental audits for approval and operational purposes.<sup>382</sup>

## 4.5 Zimbabwe

### 4.5.1 *Constitutional requirement for environmental protection in Zimbabwe*

Similar to the Constitution of Botswana, the current Constitution of Zimbabwe has no specific provision relating to the protection of the environment. Therefore, EIAs were not a legal requirement in Zimbabwe.<sup>383</sup> Due to this shortcoming the government of Zimbabwe established, among others, the EIA Policy in 1997 and associated guidelines, the Environmental Management Act 13 of 2002 (Chapter 20:27) and the National Environmental Policy of 2003.<sup>384</sup> These Acts thus provide for the protection of the environment even though there is no constitutional requirement for environmental protection.

Both the Environmental Management Act and the National Environmental Policy are used in conjunction with the EIA guidelines to ensure that effective and procedurally correct EIAs

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<sup>377</sup> EIA Act s7.

<sup>378</sup> EIA Act Part V.

<sup>379</sup> EIA Act s20 (1).

<sup>380</sup> EIA Act s28.

<sup>381</sup> EIA Act s20 (2).

<sup>382</sup> EIA Act s21 (1).

<sup>383</sup> <http://www.saiea.com/saiea-book/Botswana1.pdf> (last accessed 24 July 2011).

<sup>384</sup> Handbook on Environmental Assessment Legislation in the SADC Region 405.

are conducted.<sup>385</sup> The Environmental Management Act will now be analysed in order to determine whether it effectively provides for protection mechanisms which aim to minimise or eliminate the negative impacts associated with IBTs.

#### **4.5.2 Environmental Management Act**

This Act was established to provide *inter alia*, for sustainable management of natural resources and protection of the environment, the preparation of a National Environmental Plan and other plans for the management and protection of the environment, and to establish an Environmental Management Agency.<sup>386</sup>

The Act provides for general environmental principles<sup>387</sup> and associated rights.<sup>388</sup> It specifically provides that every person has a right to:

(a) a clean environment that is not harmful to health; and

(b) access to environmental information; and

(c) protect the environment for the benefit of present and future generations and to participate in the implementation of the promulgation of reasonable legislative, policy and other measures that<sup>2</sup>



<sup>385</sup>Handbook on Environmental Assessment Legislation in the SADC Region 406.

<sup>386</sup>Environmental Management Act, Preamble.

<sup>387</sup> According to s4 (2) Environmental Management Act, the principles of environmental management are as follows:

(a) all elements of the environment are linked and inter-related, therefore environmental management must be integrated and the best practicable environmental option pursued;

(b) environmental management must place people and their needs at the forefront of its concern;

(c) the participation of all interested and affected parties in environmental governance must be promoted and all people must be given an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation;

(d) environmental education, environmental awareness and the sharing of knowledge and experience must be promoted in order to increase the capacity of communities to address environmental issues and engender values, attitudes, skills and behaviour consistent with environmental management;

(e) development must be socially, environmentally and economically sustainable.

(f) anticipated negative impact on the environment and on people's environmental rights shall be prevented, and where they cannot be altogether prevented, be minimised and remedied;

(g) any person who causes pollution or environmental degradation shall meet the cost of remedying such pollution or environmental degradation and any resultant adverse health effects, as well as the cost of preventing, controlling or minimising further pollution, environmental damage or adverse health effects;

(h) global and international responsibilities relating to the environment must be discharged in the national interest;

(i) sensitive, vulnerable and highly dynamic or stressed ecosystems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure'.

<sup>388</sup>Environmental Management Act, Part II.

*(i) prevent pollution and environmental degradation; and*

*(ii) secure ecologically sustainable management and use of natural resources while promoting justifiable economic and social development.*<sup>389</sup>

Further, the Minister has the duty, among others, to:

*(a) regulate the management of the environment and to promote, co-ordinate and monitor the protection of the environment and the control of pollution*<sup>390</sup>; and

*(b) to regulate the activities of all government agencies and other agencies to the extent that their activities impact on the environment.*<sup>391</sup>

This means that when an IBT is undertaken, the Minister has the overall duty to ensure that such an activity does not negatively impact on the environment. The Minister may also delegate his/her duties to the National Environmental Council (the Council) and to the Environmental Management Agency (the Agency).<sup>392</sup> The Act establishes the Council<sup>393</sup> and provides for its duties and functions.<sup>394</sup> Functions of the Council include: providing advice regarding policy formulation<sup>395</sup>; the determination of policies and priorities for the protection of the environment; and to review and recommend guidelines for environmental management plans and environmental action plans.<sup>396</sup> The Act further establishes the Agency which provides for environmental quality standards<sup>397</sup> relating, among others, to water management.<sup>398</sup> It specifically allows the Agency to participate in matters which, among others, to 'regulate and monitor the control of invasive alien species'<sup>399</sup>; 'regulate, monitor, review, and approve environmental impact assessments'<sup>400</sup> and to undertake any

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<sup>389</sup> Environmental Management Act s4.

<sup>390</sup> Environmental Management Act s5 (1)(a).

<sup>391</sup> Environmental Management Act s5 (1)(b).

<sup>392</sup> Environmental Management Act s6.

<sup>393</sup> Environmental Management Act s7.

<sup>394</sup> Environmental Management Act s8.

<sup>395</sup> Environmental Management Act s8 (1)(a).

<sup>396</sup> Environmental Management Act s8 (1)(e).

<sup>397</sup> Section 55 establishes a Standards and Enforcement Committee which is responsible for among others, advising the Agency on acceptable standards for water and air quality as well as acceptable methods of waste disposal.

<sup>398</sup> Environmental Management Act s9.

<sup>399</sup> Environmental Management Act s10 (b)(v).

<sup>400</sup> Environmental Management Act s10 (b)(vi).

works which are deemed necessary for the protection or management of the environment.<sup>401</sup>

The Act further places an obligation on the Minister to prepare a National Environmental Plan which includes measures for:

*(a) the protection of ecological processes, natural systems and the natural beauty as well as the preservation of biotic diversity in the natural environment;*

*(b) the promotion of sustained utilisation of species and ecosystems and the effective application and re-use of natural resources and*

*(c) the protection of the environment against disturbance, deterioration, defacement, poisoning or destruction as a result of man-made structures, installations, processes or products or human activities.*<sup>402</sup>

Moreover, EIAs and environmental audits must be performed for projects<sup>403</sup> identified in Schedule 1.<sup>404</sup> Therefore, an EIA must accompany the development plans of an IBT. The Agency may order a person who contravenes s97(1) to either mitigate the adverse effects imposed on the environment or, where such mitigation is not possible, order that such works be destroyed.<sup>405</sup> The Act further places a duty of care on a developer to ensure that the undertaken IBT does not have an adverse impact on the environment.<sup>406</sup>

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<sup>401</sup>Environmental Management Act s10 (b)(xii).

<sup>402</sup>Environmental Management Act s88.

<sup>403</sup> Schedule 1 of the Environmental Management Act defines these projects which include: Dams and man-made lakes; hydropower schemes and water supply for:

'(a) groundwater development for industrial, agricultural or urban water supply;

(b) major canals;

(c) cross-drainage water transfers;

(d) major pipelines;

(e) water withdrawals from rivers or reservoirs'.

<sup>404</sup>Environmental Management Act s97 (1).

<sup>405</sup>Environmental Management Act s97 (3).

<sup>406</sup>Environmental Management Act s107.

Inspectors<sup>407</sup> may also instruct persons who adversely affect the environment, to, with immediate effect; take measures to prevent further environmental harm.<sup>408</sup>

It is therefore clear, that protection of biodiversity is prominent in the Act as it provides that the Minister will take measures necessary to conserve and protect the biological diversity of Zimbabwe.<sup>409</sup> The Minister must further, as a means to fulfil Zimbabwe's obligations under the United Nations Convention on Biological Diversity of 1992, take measures which among others, determine actual and potential threats to the biological diversity and devise such measures as are necessary for preventing, removing or mitigating the effect of those threats, as well as and to 'devise measures for better protection and conservation of rare and endemic species of wild fauna and flora'.<sup>410</sup> Thus, when an IBT is undertaken, the Minister must take measures to prevent and mitigate the negative effects on and potential threats to biodiversity. This, however, will be done in any event through an EIA being performed before the desired IBT is developed.

#### 4.6 Conclusion

From the above it is clear that these SADC States have individually adopted policy and regulatory measures with a view to manage the negative impacts which occur as a result of IBT's. It is to be noted that even though some of these countries do not have an environmental right inherent in their respective Constitution, their national laws and policies are explicit and clear in terms of providing measures to protect the environment. It is, therefore, no surprise that South Africa's environmental legislation is the most comprehensive, especially in terms of taking measures to ensure adequate environmental protection.

However, given the fact that environmental protection and conservation are relatively new realisations, gaps exist with regard to the effective implementation of environmental

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<sup>407</sup> Inspectors are appointed under section 35 of the Environmental Management Act which provides that:

'(1) The Board may appoint:

(a) such number of inspectors as it considers necessary to carry out inspections and ensure the proper enforcement of this Act; and

(b) such number of environmental officers, licensing officers and other officers to carry out such duties as it considers necessary for the purposes of this Act'.

<sup>408</sup> Environmental Management Act s115(1).

<sup>409</sup> Environmental Management Act s116 (1).

<sup>410</sup> Environmental Management Act ss116 (1)(d) and (e).

legislation and policy regulating environmental protection and conservation. In Namibia, for instance, the new Water Resources Management Act (although already drafted) is yet to come into force.<sup>411</sup> One reason for the delay is the practical implications of implementation.<sup>412</sup> As this is a comprehensive Act which seeks to 'provide for the management, development, protection, conservation, and use of water resources; to establish the Water Advisory Council, the Water Regulatory Board and the Water Tribunal; and to provide for incidental matters'<sup>413</sup>, which would also replace the Water Act<sup>414</sup>, it is understandable why implementation would be a challenge. Practically, implementation is problematic as a result of lack of personnel to fulfil the Act's objectives effectively.

However, as each of these States provides for an EIA to be undertaken before any activity, e.g. an IBT is undertaken; it proves that effective regulatory measures are taken in the SADC, in order to curb the possible negative effects of IBTs.

There is, however, a problem of regional fragmentation. As each State implemented its own EIA legislation or policy, it is common-cause that there will be a difference in form and/or content of the respective EIA process. This creates an inherent problem in SADC because there is no regional standard to which an EIA can be measured. For instance, although an activity in one country requires an EIA, this might not be the case in another country, due to each country identifying its own listed activities which require an EIA. This creates regional uncertainty which is undesirable.

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<sup>411</sup>Ruppel (2011) 88.

<sup>412</sup>Ruppel (2011) 88.

<sup>413</sup>Preamble of the Water Resources Management Act 2004.


<sup>414</sup>Act 54 of 1956.

## Chapter 5

### OVERALL CONCLUSION AND RECOMMENDATIONS

As established, water scarcity is a worldwide threat. The challenge which humanity face relates to the way these water resources are currently being distributed but more importantly, managed. These facts can hardly be over-emphasized. In response to this challenge, IBTs have been developed. The problem is that the receiving basin is plagued with various negative impacts due to the IBT. The overarching concern which arises is the protection of the environment. It is for this reason that there is a calling for integrated management of IBTs. To achieve this, tools such as IWRM and IRBM must effectively be employed in order for the respective RBO to reach its optimum functional level. This, however, is dependent on whether there is sufficient policy and appropriate legislation regulating the protection of the environment.

The present piece of writing documents:

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- a) What States have done thus far with regard to managing the negative impacts associated with IBTs and
- b) Whether the policy and regulatory measures are actually appropriate, effective and adequate.
- c) To define and conclude what needs to be done if gaps are to be bridged and whether there is room for improvement

With regard to the above, South Africa, Namibia, Botswana and Zimbabwe have taken steps in order to effectively manage the negative impacts associated with IBTs (some more comprehensive than others, but steps nonetheless). To be noted, however, is that countries in the SADC region are at different stages of implementing legislation and various other frameworks in order to protect the environment. Taking the law and policy of South Africa, Namibia, Botswana and Zimbabwe into account, it is noted that some have framed and enacted comprehensive environmental legislation, while others only partially. Due to this, gaps still exist as to the proper implementation and regulation of environmental legislation



that aims at curbing or eliminating the negative impacts associated with IBTs within the region.

This void can be filled if IWRM together with IRBM are employed. These tools have to be rigorously employed if IBTs are to reach its potential benefits and for regional integration to be effectively achieved. By definition, IWRM means working together in order to achieve mutual benefits. An important mechanism that stems from IWRM is the EIA process or environmental assessments (as referred to by some countries). To facilitate effective co-ordination of IBTs in the region, the acceptance of a mandatory EIA process, is an important factor. The EIA process is of monumental importance as it not only has the capability of predicting the possible negative effects that can occur during IBTs, but also provides avenues to minimise, mitigate or even eliminate these impacts. It is contended that 'environmental protection in the region will be enhanced if countries abandon traditional policies of exclusion and strict sovereign independence in respect of EIA'.<sup>415</sup>

With this said, there is no set standard of EIAs in the region or between the States (as examine). This creates uncertainty within the region and thus hinders collaborative efforts. As each State individually adopted separate EIA systems, differences between these systems are inevitable. These differences include: firstly, not all EIA systems make provision for mandatory public participation. In Namibia for example, public participation only comes into play when the Minister directs that the application and assessment report are now open for inspection.<sup>416</sup> This is a vague provision. The Act fails to specify the methods the Minister will use in order to alert interested or affected parties that the assessment report is now available for inspection. Zimbabwe on the other hand, makes no provision for the public to participate in the EIA process.<sup>417</sup>

Secondly, not all EIA procedures stipulate the minimum time period when notification of public participation will be made available. Of all four countries analysed, only Botswana stipulates the time period of at least 21 days in which public participation will take place.<sup>418</sup>

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<sup>415</sup>SAJELP 12 (2005) 57.

<sup>416</sup>Environmental Management Act 7 of 2007 s44 (7)(b).

<sup>417</sup>The Minister considers the EIA report solely based on the form and content of the EIA report as set out in the Environmental Management Act (chapter 20:27) s99.

<sup>418</sup>EIA Act 6 of 2005 s7 (2)(a).

Thirdly, steps taken in the EIA process differs substantially. South Africa is the only country that requires a screening process<sup>419</sup>, a plan of study for scoping<sup>420</sup> and a scoping report before an EIA can be undertaken.

Fourthly, as each State independently prescribes its own EIA and thus listed activities, the consequence and possibility of an activity requiring an EIA in one country and not in the other, creates a critical loophole within the fragmented region.<sup>421</sup>

The strictness of enforcement measures also varies. In Namibia for instance, enforcement measures include criminal sanctions and other deterrents,<sup>422</sup> while in others, 'enforcement is principally by way of criminal penalties'.<sup>423</sup>

These differences and discrepancies thus have an undesirable effect on the respective RBOs as they will be individually exercising different standards and methods (according to their domestic laws) while undertaking a collaborative transboundary activity. Similarly, different methods and approaches will be used as a means to mitigate, minimise or prevent the possible negative impacts associated with IBTs within the region.

Therefore, there is a calling for the development of a uniform and integrated EIA system within the region. It is noted that, the best EIA practises is likely to be enhanced in the region if there is a standard against which national EIA systems may be compared.<sup>424</sup>

Based on this, it is recommended that a regional legal framework be developed which is devoted, not only to the management of IBTs but everything incidental thereto (which includes the mandatory EIA process). This may take the form of a by-product or an addendum to the SADC Protocol (as Agenda 21 is to the Rio Declaration) as a means to

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<sup>419</sup> A screening process determines whether an activity is a listed activity requiring an EIA to be undertaken.

<sup>420</sup> Once an activity is sought to undergo an EIA, the scope of the assessment needs to be determined. 'The purpose of this is to provide guidance on the issues and types of information that the planning authority would expect to be included in the environmental statement'. Available at <http://www.surreycc.gov.uk/> (last accessed 31 August 2011).

<sup>421</sup> SAJELP 12 (2005) 67.

<sup>422</sup> S34 (3) of the Environmental Management Act 7 Of 2007 provides: 'Any person who fails to comply with any condition attached to the environmental clearance certificate in terms of subsection (1) commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment'.

<sup>423</sup> SAJELP 12 (2005) 68.

<sup>424</sup> SAJELP 12 (2005) 57.

reiterate that regional integration is fundamental if SADC member States are to secure its water resources.

It is also recommended that the existing RBOs be revitalised, with financial and political support (by their respective governments, United Nations organisations and other financing body corporates) needed for these RBOs to perform their functions effectively and to achieve their objectives for which they were created.<sup>425</sup> Ancillary to this, the RBOs should explore self-supporting mechanisms in order to be self-supporting and thus sustainable.<sup>426</sup>

Co-operation between existing RBOs in terms of exchanging expertise, best practices and information can play an important role in the confidence and improvement of the RBO.

It is recommended that the successful RBOs (such as the LHWP) assist the less successful ones through exchange programmes.<sup>427</sup> This will see RBO representatives share their mistakes and success stories which would foster technical co-operation and collaboration between RBOs within the region.

This would create the platform through which regular information and technical data concerning planned or undertaken projects can be expressed. It is recommended that mechanisms are to be put in place that would facilitate such information and data sharing between RBOs.<sup>428</sup> This would promote and enhance regional integration. In turn, this will have an immediate impact on the effective regulation of RBO and consequently, on the effective management of the possible negative effects associated with IBTs.

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<sup>425</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 57.

<sup>426</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 57.

<sup>427</sup>United Nations Economic Commission for Africa: Transboundary River/Lake Basin Water Development in Africa: Prospects, Problems and Achievements. December 2000. At 57.

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