

LLM  
ENVIRONMENTAL LAW



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# BIODIVERSITY OFFSETS

Towards an Effective Legal Framework in South Africa

by

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Submitted to **The University of Cape Town** in fulfilment of part of the LLM in Environmental Law by course work and dissertation, in approved courses and a minor dissertation. The other part of the requirement for this qualification was the completion of a programme of courses.

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Faculty of Law, University of Cape Town

**Date of submission:** 16 February 2015

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## **Abstract**

South Africa is one of the most biologically diverse countries in the world. This biodiversity is under threat from economic, social and climate change pressures. One mechanism that could be added to South Africa's conservation tools, is that of the biodiversity offset where certain activities are designed to compensate for unavoidable harm to biodiversity resulting from development.

The concept and theory of offsetting is controversial however, and not all commentators are in favour of encouraging a formal biodiversity offsetting regime in South Africa. This dissertation will explore the concept of biodiversity offsets in the regulatory permitting context and the controversies implicit in their theory and implementation. A framework for their inclusion in South Africa's environmental permitting context will be suggested.

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## List of Acronyms

BBOP- Business and Biodiversity Offsets Programme

CBD- Convention on Biological Diversity 1992

DEA- Department of Environmental Affairs

DEADET – Eastern Cape Department of Economic Development Environmental Affairs and Tourism

DEADP- Western Cape Department of Environmental Affairs and Development Planning

DMR – Department of Mineral Resources

EWT- Endangered Wildlife Trust

IFL- International Finance Corporation

IUCN- International Union for Conservation of Nature

KZN- KwaZulu Natal Province

NBF- National Biodiversity Framework

NEMA - National Environmental Management Act 107 of 1998.

NEMAQA- National Environmental Management: Air Quality Act 39 of 2009

NEMBA -National Environmental Management: Biodiversity Act No 10 of 2004.

NEMICMA - National Environmental Management: Integrated Coastal Management Act 24 of 2008.

NEMPAA- National Environmental Management: Protected Areas Act No 49 of 2003.

NEMWA- National Environment Management: Waste Act 59 of 2008

NSBA- National Spatial Biodiversity Assessment

NSBAP- National Biodiversity Strategy and Action Plan

NWA - National Water Act 36 of 1998.

SANBI- South African National Biodiversity Institute

SANRAL- South African National Roads Agency

SEMA- Specific Environmental Management Acts

WHCA- World Heritage Convention Act No 49 of 1999

WWF- World Wildlife Foundation

## **Acknowledgement**

This topic was selected for my LLM dissertation following communications with Jeff Manual, the Deputy Director: Land Use and Environmental Management in the Biodiversity Planning and Mainstreaming Division of the South African National Biodiversity Institute (SANBI). It was suggested that an investigation of how offsets have been enabled in other legislation globally, and possibly the proposal of amendments to South Africa's current legislation (specifically the National Environment Management Act 107 of 1998, the Environmental Impact Assessment Regulations, and possibly other Specific Environmental Management Acts), to strengthen the implementation of offsets and safeguard against their potential abuse would be useful and have practical application for both SANBI and environmental authorities.

## Chapter 1: INTRODUCTION

### 1.1 South African background

In a country with massive socio-economic challenges to overcome, conservation of biodiversity is often not a priority. However, South African authorities are mandated to consider and minimise adverse environmental impacts of economic and social development by the environmental right contained in section 24 of the South African Constitution<sup>1</sup> and legislation drafted in furtherance of this right.

South Africa is home to an incredible number of species and ecosystems.<sup>2</sup> It is the third most biologically diverse country in the world.<sup>3</sup> It also has a population of over 50 million people, most of whom live in poverty.<sup>4</sup> Much of South Africa's biodiversity is threatened through loss of habitat, pollution and climate change.<sup>5</sup> The State has the precarious position of allocating its resources between social and environmental programmes in an attempt to uplift the country, its people and its biodiversity.

In response to the environmental crisis, South African law has developed a number of tools with which to balance social, economic and environmental concerns. These include criminal, civil, regulatory, administrative, and tax instruments to prevent unlawful (and lawful) environmental degradation. Environmental stewardship incentives and programmes are also becoming increasingly popular. The focus of this

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<sup>1</sup> Constitution of the Republic of South Africa, 1996.

<sup>2</sup> The *National Biodiversity Assessment 2011 (NBA)* provides that South Africa is home to 95 000 species and that at least 50 000 are yet to be discovered (14).

<sup>3</sup> Glazewski & du Toit "Environmental Law in South Africa" 13.1.1 at page 13-3.

<sup>4</sup> The *National Strategy for Sustainable Development and Action Plan 2011-2014 (NSSDAP)* indicates that over 13% of households live in informal dwellings, over 7% of households do not have access to water from a safe source, 27.8% of households do not have access to sanitation and 17.4% do not have access to electricity (NSSDAP 11).

<sup>5</sup> NSSDAP 19.

dissertation is on one tool within the regulatory, permitting context – a biodiversity offset.

Biodiversity offsets seek to compensate for biodiversity destroyed by development by requiring specific conservation actions of developers.<sup>6</sup> The conservation actions should ensure that what was destroyed is offset through the creation, protection or remediation of biodiversity of (at minimum) equal value.<sup>7</sup> This dissertation is concerned with biodiversity offsets as a mandatory requirement in various environmental authorisations which are required by developers prior to commencing with development.<sup>8</sup>

South African environmental law is primarily regulated by the environmental right contained in section 24 of the Constitution<sup>9</sup> and the National Environmental Management Act 107 of 1998 (NEMA), which is the framework piece of environmental legislation and provides a basis for a comprehensive set of laws regulating various aspects of the environment.<sup>10</sup> South African law does not at present provide specifically for biodiversity offsets, but it does allow for conditions to be attached by authorities when granting various environmental authorisations. An increasing number of biodiversity offsets are being required as a condition in environmental authorisations in South Africa.<sup>11</sup> This dissertation will examine whether a formal biodiversity offset regime mandating biodiversity offsets as a condition of authorisation, is appropriate and in line with the Constitutional and legislative scheme regulating the environment in South Africa.

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<sup>6</sup> The concept and definition is discussed below at 2.1.1.

<sup>7</sup> Bull et al "Biodiversity offsets in theory and practice" 2013 *Fauna & Flora International* 3.

<sup>8</sup> Such environmental authorisations include water use licences in terms of the National Water Act 36 of 1998, mining permits and authorisations under the Minerals and Petroleum Resources Development Act 28 of 2002 and environmental authorisations in terms of NEMA.

<sup>9</sup> Constitution of the Republic of South Africa, 1996.

<sup>10</sup> See Chapter 3 for a discussion of the legislative scheme regulating the environment in South Africa.

<sup>11</sup> See Chapter 2 for examples of this trend.

Biodiversity offsets have been used in America, Australia and Europe for many years,<sup>12</sup> but have not until recently begun to be utilised in South Africa.<sup>13</sup> There is a growing interest in them from business and the public sector,<sup>14</sup> but the concept remains somewhat controversial in South Africa. Despite a huge impetus in the drafting of comprehensive environmental laws in South Africa in the last 15 years, biodiversity offsets have only just begun to be made use of by developers and environmental authorities in the last few years.

At present the implementation of biodiversity offsets takes place by way of attaching conditions to authorisations. As there is no formal regime and no detailed guidance on how or when biodiversity offsets ought to be imposed as conditions to authorisations, legal uncertainty exists at present.

While offsets have the potential to prove a valuable tool in striving towards sustainable development, there are many voices opposed to the very concept of offsetting.<sup>15</sup>

## **1.2 Brief overview of the structure of the dissertation**

The primary research question in this dissertation is whether a legal regime regulating biodiversity offsets should be formally introduced into South Africa. Such a dedicated legal regime would form part of the permitting scheme which currently involves environmental authorisations, water use licences and mining rights amongst other permits in the

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<sup>12</sup> McKenney B & Kiesecker J "Policy Development for Biodiversity Offsets: A Review of Offset Frameworks" 2010 *Environmental Management* 165-176 at 165.

<sup>13</sup> *Hangklip/Kleinmond Federation of Ratepayers Associations v Minister for Environmental Planning & Economic Development, Western Cape* (2009) JOL 24371 (WCC) at para 67.

<sup>14</sup> Gardner et al "Biodiversity Offsets and the Challenge of Achieving No Net Loss" 2013 (2) *Conservation Biology Journal*.

<sup>15</sup> See for example media articles "Are biodiversity offsets a licence to plunder natural resources?" in the IAIA Newsletter, 2005, and Mowat *Biodiversity Offsets- an End to Environmental Protection*, 140 *International Organisations call for End to Biodiversity Offsetting Plans*, and The Institute for European Environmental Policy's *Critical Review of Biodiversity offset track record* and Walker et al *Why Bartering Biodiversity Fails*. Activist websites (such as 'No to Biodiversity Offsetting') call for a prohibition on biodiversity offsets.

environmental context.<sup>16</sup> Once this question has been addressed, this dissertation will seek to answer how best such a regime should be introduced and implemented.

In exploring the above issues, subsidiary research questions will address whether regulatory biodiversity offsets should be introduced from a conceptual and theoretical perspective. An analysis of their pros and cons is required for this. The objectives and value of biodiversity offsetting will be discussed in exploring whether they are compatible with the Constitutional and legislative scheme regulating the environment in South Africa. A broad analysis of South African environmental law is required in order to address this. The primary laws of relevance to biodiversity offsets, which are discussed in Chapter 3 below, are NEMA and the Environmental Impact Assessment (EIA) Regulations, the National Water Act 36 of 1998 (NWA) and the Minerals and Petroleum Resources Development Act 28 of 2002 (MPRDA). The various models of biodiversity offsets are discussed in suggesting how best to introduce biodiversity offsets in the South African context. Various conceptual issues implicated in biodiversity offsetting are explored. Questions regarding how best to legislate these issues are also addressed. In conclusion, it will be suggested that there is a role for biodiversity offsets to play in South Africa in the environmental permitting context, but within strict limits.

Following the introduction, Chapter 2 introduces the fundamental concepts involved in biodiversity offsetting: the definition, theory, nature, goal, purpose and place of offsetting within South Africa and internationally. Models of biodiversity offsetting are discussed.

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<sup>16</sup>In terms of the National Water Act 36 of 1998, the Minerals and Petroleum Resources Development Act 28 of 2002 and the National Environmental Management Act 108 of 1998.

Chapter 3 analyses the South African regulatory scheme with regards environmental law and where biodiversity offsetting would fit in within the regime. The laws and principles applicable to biodiversity offsets are analysed in order to show whether they are compatible with the concept. Chapter 3 concludes with a discussion on the compatibility between biodiversity offsets and South African environmental law.

Chapter 4 deals with the pros and cons and controversies implicit in the concept of biodiversity offsetting. The chapter elaborates on the arguments in favour and opposed to the concept in order to discuss whether they should be formally introduced within the South African environmental permitting scheme. Benefits and disadvantages to conservation, business, communities and regulators are assessed. The advantages and disadvantages of such a formal regime are also addressed. Chapter 4 concludes with examples of offsetting within South Africa in order to demonstrate the pros and cons of biodiversity offsetting.

Chapter 5 summarises the current position regarding biodiversity offsets in South Africa and identifies potential changes in legislation or policy which would be required or recommended for the formal introduction of biodiversity offsets into the permitting context. Chapter 5 concludes the dissertation arguing that a dedicated biodiversity offset regime will be beneficial to the current ad hoc system. Such a regime should include strict limits as to when and in what circumstances an offset may be permissible.

### **1.3 Why this thesis topic?**

Despite the lack of a dedicated biodiversity offset regime, there are a growing number of examples of biodiversity offsets currently being implemented in South Africa.<sup>17</sup> Without an effective and cohesive

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<sup>17</sup> The South African National Biodiversity Institute (SANBI) suggests over 20 have been approved so far with many more in the process of being negotiated. See Manuel *Overview of the South African framework for Biodiversity Offsets* 16.

framework for this implementation of offsets, the environment could suffer as a result of poor decision, policies and enforcement. It is hoped that this dissertation will add to a body of work intended to give greater clarity to those involved in the process of biodiversity offsetting, whether in the public or private sector. While this dissertation does not suggest a framework, it highlights the most important considerations that should be taken into account when designing such a framework.

## **Chapter 2: WHAT ARE BIODIVERSITY OFFSETS**

This chapter will explore the concept and theory of biodiversity offsets. Their role, purpose and nature will be examined. While the various types of offsets will be addressed, this dissertation will not focus on a particular type of offset but rather the concept and theory of offsetting and its applicability in the South African permitting context. The various models of offsetting will be explored.

The design elements and necessary components required to establish a biodiversity offsetting regime are explored in reference to literature drawn from countries with long established offsetting regimes (such as those regulated by the international *Business and Biodiversity Offsets Programme* (BBOP) collaboration).<sup>18</sup> Such design elements are both conceptual (in that the ideas involved in offsetting must be compatible) and practical (in the sense that a regime should be maintain compatibility with the requirements of the primary laws regulating the environment in South Africa).

### **2.1. Fundamental aspects of biodiversity offsets**

#### **2.1.1 Definition, theory and concept**

There is no settled definition of the term 'biodiversity offset' but several widely adopted attempts have been made to encompass the concept.<sup>19</sup> In one of the first comprehensive reports on Biodiversity Offsetting published in 2004 by the IUCN, biodiversity offsets were defined as "Conservation actions intended to compensate for residual, unavoidable harm to

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<sup>18</sup> BBOP has produced much literature on the implementation and benefits of biodiversity offsets and is a well-respected and persuasive source for materials on biodiversity offsetting (see for example the UNEP and IUCN reports listed in the bibliography where BBOP definitions and publications are cited authoritatively). The American-based BBOP is one of the leading proponents of biodiversity offsets and is a collaboration of more than 75 organizations and individuals including companies, financial institutions, government agencies and civil society organisations. BBOP has been involved in the testing and developing of principles, guidelines and best practice on biodiversity offsets and conservation banking worldwide.

<sup>19</sup> In addition to there not being a settled definition of 'biodiversity offset,' the process of biodiversity offsetting is also referred to as mitigation, conservation or habitat banking or BioBanking in different jurisdictions.

biodiversity impacts caused by development projects, so as to ensure no net loss of biodiversity.”<sup>20</sup> The authors of the report included a temporal aspect to the definition of an offset in that developers should only consider offsetting harm once efforts have been made avoid and minimise negative impacts on biodiversity.<sup>21</sup>

Another definition, from the Western Australia Environmental Protection Authority, describes biodiversity offsets as “Environmentally beneficial activities undertaken to counterbalance an adverse environmental impact, aspiring to achieve ‘no net environmental loss’ or achieve a ‘net environmental benefit.’<sup>22</sup>

Other definitions provide that biodiversity offsets are “positive actions that conserve biodiversity to compensate for biodiversity loss arising from development”<sup>23</sup>

There are differing meanings and implications attributed to the words ‘mitigation,’ and ‘compensation,’ which are often used in conjunction or to describe offsetting.<sup>24</sup> The definitions provided above involve the same central elements (such as compensation, mitigation and no net loss, positive conservation actions or activities, and development or adverse environmental impact). The broad terms used should be sufficiently wide enough to encompass a vast variety of forms which a biodiversity offset might take.

The broad theory of an offset is that unavoidable ecological damage by a development should be ‘counterbalanced’ by the developer.<sup>25</sup> If a developer wishes to develop land where there will be environmental

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<sup>20</sup> Ten Kate K, Bishop J & Bayon R “*Biodiversity offsets: Views, experience, and the business case*” (2004) IUCN, Gland, Switzerland 13.

<sup>21</sup> Ten Kate et al *Biodiversity Offsets* 13.

<sup>22</sup> ICMM IUCN (2012) *Independent report on biodiversity offsets* 7.

<sup>23</sup> Department of Environment and Conservation (NSW, Australia). *BioBanking* 1.

<sup>24</sup> Ten Kate et al *Biodiversity Offsets* 9.

<sup>25</sup> Doswald et al “Biodiversity Offsets: voluntary and compliance regimes. A review of existing schemes, initiatives and guidance for financial institutions” 2012 (6) UNEP-WCMC.

degradation, the developer should conduct measurable conservation activities to compensate for the degradation caused.<sup>26</sup> These activities must result in (at a minimum) no net loss of biodiversity.<sup>27</sup> Prior to any development, the environmental harm must first be minimised at the design stage. Environmental damage which is able to be remediated on site should be remedied prior to an offset being implemented. There are a variety of ways this contribution could be made. This dissertation is concerned with such positive conservation actions being imposed as a mandatory condition in a variety of environmental authorisations which are necessary in order for a party to develop land. Such a system would form part of the established environmental permitting scheme in South Africa.

An essential component of the definition of biodiversity offsetting is the minimum requirement of 'no net loss' to be achieved through the conservation actions. This complex requirement is what sets biodiversity offsets apart from other forms of conservation and is considered at 2.2 below.

### **2.1.2 The goal of biodiversity offsetting**

The purpose of a biodiversity offset is to find a middle path between development and conservation. Offsets seek to facilitate development while recognising the detrimental ecological effect of such development. They would fit into South Africa's toolbox of regulatory mechanisms to be used in conjunction with civil, criminal, administrative and tax instruments in preventing environmental degradation while recognising the need for development.

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<sup>26</sup> Bull et al 2013 *Fauna & Flora International* 2.

<sup>27</sup> Gardner et al 2013 *Conservation Biology Journal* 2.

One aim of biodiversity offsetting is to achieve *no net loss* of biological diversity.<sup>28</sup> Critics describe this goal as a method of “relieving tension” between environmental concerns and development needs by encouraging economic progress without the associated damage to biodiversity.<sup>29</sup> BBOP suggests that the goal of biodiversity offsetting is to achieve “no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function” as well as ensuring no reduction in “people’s use and cultural values associated with biodiversity.”<sup>30</sup>

While no net loss is the minimum requirement, there are companies, and some policies, which require net gain, leaving the environment in a ‘better’ position than prior to the construction of the development.<sup>31</sup> These two goals are addressed below.

## 2.2 NO NET LOSS

In considering the formal imposition of biodiversity offsets in South Africa, it must be established whether law should mandate no less loss or net gain of biodiversity.

One aspect that sets biodiversity offsets apart from other environmental stewardship approaches is the essential requirement of ‘no net loss.’<sup>32</sup> The idea of no net loss may be deceptively simple, and the definition remains scientifically and legally disputed.<sup>33</sup> The Convention on Biological

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<sup>28</sup> Not only is no net loss of biodiversity a goal of biodiversity offsetting, but a central definitional aspect in that should an offset result in net loss of biodiversity it cannot be considered a “biodiversity offset” (See Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies Biological Conservation* (2012) 142.)

<sup>29</sup> Gardner et al 2013 (2) *Conservation Biology Journal*.

<sup>30</sup> BBOP *Principles on Biodiversity Offsets* 1.

<sup>31</sup> See McKenney 2005 *Environmental Offset Policies, Principles and Methods in Biodiversity Neutral Initiative* 13 for a discussion on which countries require net gain or no net loss in the context of offsetting.

<sup>32</sup> Other stewardship initiatives include traditional philanthropy, education, training or research on environmental matters or other conservation actions undertaken by developers which are not directly linked to the adverse environmental effect a project has on the environment. See IUCN *Independent report on biodiversity offsets* 9.

<sup>33</sup> Ten Kate et al *Biodiversity Offsets* 11.

Diversity,<sup>34</sup> to which South Africa has been a party since ratifying the Convention in 1995, defines biological diversity (also known as 'biodiversity') as "the variability among living organisms from all sources including, *inter alia* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems."<sup>35</sup>

Because the definition of biodiversity is extremely wide and includes the variety of species, ecosystems, genetics and habitats, ensuring no net loss of *all* these aspects is extremely challenging. Ten Kate et al, in the context of wetland development, give the example of requiring a total 'amount' of wetland being maintained before a project is authorised.<sup>36</sup> But often it will not be the size or amount of biodiversity that is required to be conserved but the quantity, type or placement of an ecosystem, habitat or species.<sup>37</sup>

In order to design and implement such an offset, conservation outcomes need to be quantifiable in order to demonstrate a balance between a project's impacts on biodiversity and the benefits achieved through the offset.<sup>38</sup> There are many challenges involved in the quantifying of conservation outcomes, in measuring both the losses to biodiversity due to a proposed project, and the conservation gains proposed in the offset agreement. Whatever the challenges, both the losses and gains need to be established for a biodiversity offset to be designed. The calculation of biodiversity losses and gains and the associated losses and gains in ecosystem services are sometimes referred to as 'environmental accountancy.'

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<sup>34</sup> Convention on Biological Diversity of the United Nations Conference on the Environment and Development 31 ILM 818.

<sup>35</sup> Article 2 of the Convention on Biological Diversity.

<sup>36</sup> Ten Kate et al *Biodiversity Offsets* 11.

<sup>37</sup> Ten Kate et al *Biodiversity Offsets* 62-64.

<sup>38</sup> Bull et al 2013 *Fauna & Flora International* 3.

In theory, no net loss means that no species or ecosystem will be lost as a result of development- every negative impact will be compensated for by a positive effort. Where a particular habitat is destroyed, an 'equal' amount will be created, restored or secured - where a wetland is degraded, one will be maintained or restored. There are however serious practical concerns that biodiversity offsets are not adequate to ensure no net loss.<sup>39</sup>

While no net loss is a worthy goal, commentators have identified many issues that call into question the achievability and practical effectiveness of this goal.<sup>40</sup> A primary concern relates to definitional aspects of 'no net loss of biodiversity' and what this means in practice.<sup>41</sup> Given the wide definition of biodiversity, no net loss requires no net decline in plant and animal species (in terms of genetics, populations and habitat) and no net reduction in the ability for species to function properly.<sup>42</sup> Critics argue that this standard is "almost impossible to guarantee" due to limitations in scientific knowledge and data required to prove that populations, species and ecosystems have not been reduced.<sup>43</sup> Determining and defining biodiversity in terms of quantifiable 'assets' has both scientific and moral components - especially where values are given to aspects of biodiversity (for instance valuing the habitat of an endangered rhinoceros over a common insect's habitat, or determining the value of trees in a forest sacred to a traditional community as opposed to the value of the wood to a company).

Once the challenges of describing and measuring the biodiversity impacted by an offset have been overcome, the next problem involved in the calculation of no net loss is the *interpretation* of losses and gains, and

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<sup>39</sup> Gardner et al 2013 (5) *Conservation Biology Journal*.

<sup>40</sup> McKenney & Kiesecker 2010 *Environmental Management* 168.

<sup>41</sup> Ten Kate et al *Biodiversity Offsets* 55; Gardner et al 2013 (4) *Conservation Biology Journal*.

<sup>42</sup> Gardner et al 2013 (4) *Conservation Biology Journal*.

<sup>43</sup> Gardner et al 2013 (4) *Conservation Biology Journal*.

determining the ambit of the effects of these on biodiversity.<sup>44</sup> Like-for-like exchanges in biodiversity through an offset will frequently not be possible, and this means that different types and kinds of biodiversity will have to be 'exchanged' in the offset. The interpretation of losses and gains involves subjective value judgments on what mitigation measures are acceptable in the circumstances.<sup>45</sup> The question of where the offset is to be implemented, onsite or offsite is also important in preventing net loss of biodiversity.<sup>46</sup>

As society is interrelated (meaning that effects on one aspect of a community may have implications for another), limits to the scope of the effects must be taken into account. Commentators have suggested that the effects to be taken into account should be limited to 'substantial direct, indirect and cumulative' but not effects on 'third party suppliers or delivery to end users.'<sup>47</sup>

### 2.2.1 Conditions for no net loss

Scientists have identified three broad conditions required for an offset to achieve no net loss of biodiversity in the context of projects with a relatively small or medium development footprint.<sup>48</sup> Firstly, the negative impacts of a development on biodiversity and the proposed positive conservation actions proposed in the offset must be **comparable**. What this means is that losses and gains should be **proportional** in terms of kind, type and extent (no less than what is adversely impacted). This would avoid criticism of the kind where conservation actions made in terms of an offset are deemed inappropriate or insufficient.<sup>49</sup> Secondly, an offset must bring about conservation gains which would **not have**

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<sup>44</sup> Ten Kate et al *Biodiversity Offsets* 11; Gardner et al 2013 (4) *Conservation Biology Journal*.

<sup>45</sup> Gardner et al 2013 *Conservation Biology Journal* 4.

<sup>46</sup> McKenney & Kiesecker 2010 *Environmental Management* 170.

<sup>47</sup> Gardner et al 2013 *Conservation Biology Journal* 5.

<sup>48</sup> Such as mining or infrastructure development, but not large scale agriculture projects see Gardner et al 2013 (5) *Conservation Biology Journal*.

<sup>49</sup> Gardner et al 2013 (5) *Conservation Biology Journal*.

**occurred naturally** had the agreement not been concluded.<sup>50</sup> This may sound self-evident, but as many offset agreements involve the protection of vulnerable habitat or species, the vulnerability or threat to the biodiversity must be proved to be real so that any protection afforded through the agreement is an additional benefit which would not have materialised without it. This criterion is sometimes referred to as the “**additionality**” requirement.<sup>51</sup> The third condition necessary to ensure no net loss of biodiversity relates to the longevity of an offset and the requirement that conservation gains are **long-term**.<sup>52</sup> In determining an appropriate offset agreement, should the adverse environmental impact be permanent (as it normally is with the clearing of land for development), the conservation actions to mitigate the damage should be comparable in time frame as well.

These three conditions must be taken into account and implemented when considering whether an offset is appropriate and whether all three conditions will be practically achievable in ensuring no net loss to biodiversity. These three requirements should therefore be incorporated as fundamentals into the design of a South African biodiversity offset regime.

### 2.2.2 Net Gain

The minimum outcome aimed for by biodiversity offsetting is that no net loss of biodiversity is achieved. However, many government authorities<sup>53</sup> and companies<sup>54</sup> that utilise offsets and have internal policies regulating offsetting, require a ‘net gain’ of biodiversity following the implementation of an offset agreement.<sup>55</sup> In theory this means that the environment is

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<sup>50</sup> Gardner et al 2013 (5) *Conservation Biology Journal*.

<sup>51</sup> McKenney & Kiesecker 2010 *Environmental Management* 170; BBOP *Principles on Biodiversity Offsets* 1.

<sup>52</sup> Gardner et al 2013 (6) *Conservation Biology Journal*.

<sup>53</sup> Such as the state of Victoria, Australia and (previously) the United States see Coyne M 2004. "Wetlands: Bush Changes Administration Policy to 'Net Gain' of Resource", Greenwire, April 23 2004, *Natural Resources* Vol. 10 No. 9 *Environment and Energy Publishing LLC*.

<sup>54</sup> Such as BP and Vedanta Mining.

<sup>55</sup> Ten Kate et al *Biodiversity Offsets* 12.

actually improved following the offset's implementation. In the South African context, 'net gain' has been described as "a situation where a particular offset's contribution to biodiversity conservation would surpass the quantum required simply to meet the scientifically established target for the affected vegetation type, habitat or feature."<sup>56</sup>

Net gain of biodiversity may occur in many ways - the expanse of land being protected or rehabilitated can be increased, the duration of such protection can be extended or the manner of the protection can be improved (for instance from areas where some development is permitted to the prohibition of all development on the land). Ten Kate et al describe the increased 'environmental value' achieved by net gain as requiring "less disturbed, less damaged, more biodiversity, greater environmental service value"<sup>57</sup> with service value referring to the benefits to society accrued through biodiversity (such as water purification or shade).

The essential elements of no net loss (additionality, comparability and longevity) would have to be implemented for net gain of biodiversity, but the proportionality between the harm done and the conservation actions would have to result in a positive impact on biodiversity following a development.

### **2.3 Principles in biodiversity offsetting**

BBOP has recommended certain principles which biodiversity offsets should conform to.<sup>58</sup> BBOP goes so far as to incorporate the principles into the definition of such an offset, meaning that should certain principles not be met, the conservation actions made in mitigation of impacts would not constitute a biodiversity offset. Other authorities and bodies have also

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<sup>56</sup> Botha *Draft Scope Gamsberg Biodiversity Offset Report* 27.

<sup>57</sup> Ten Kate et al *Biodiversity Offsets* 12.

<sup>58</sup> BBOP *Standard on Biodiversity Offsets* 1.

suggested principles which biodiversity offsetting should adhere to, but there is largely a consensus on the foundational principles.<sup>59</sup>

The principles of primary importance are:

- Prior adherence to the mitigation hierarchy
- No net loss or net gain
- Equivalency
- Additionality
- Long term nature<sup>60</sup>

The first principle in the design of a biodiversity offset is prior adherence to the ‘mitigation hierarchy.’ Adherence to this order is central to BBOP’s Standard on Biodiversity Offsets, and conformance to the mitigation hierarchy is the first of their established ten best practice principles.

### **2.3.1 The mitigation hierarchy**

An essential, definitional aspect of a biodiversity offset relates to *when* it is appropriate to implement, meaning that an offset may *only* be implemented once certain steps have been taken by developers. Most commentators require that developers and environmental authorities apply the mitigation hierarchy prior to any development taking place.<sup>61</sup> Because a biodiversity offset should only be implemented after the steps in the mitigation hierarchy have been exhausted, such offsets are often referred to as a ‘last resort’ option.<sup>62</sup> Should this hierarchy not be applied prior to offsetting, any positive conservation outcomes would not qualify as a ‘biodiversity offset.’<sup>63</sup>

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<sup>59</sup> IUCN *Independent report on biodiversity offsets* 17.

<sup>60</sup> BBOP *Principles on Biodiversity Offsets* 1.

<sup>61</sup> See for example McKenney & Kiesecker 2010 *Environmental Management* 167; BBOP *Standard on Biodiversity Offsets* 17, IUCN *Independent report on biodiversity offsets* 10, Ten Kate et al *Biodiversity Offsets* 9.

<sup>62</sup> McKenney & Kiesecker 2010 *Environmental Management* 167.

<sup>63</sup> IUCN *Independent report on biodiversity offsets* 10.

The mitigation hierarchy is an established principle in foreign and domestic legislation.<sup>64</sup> Section 2 of NEMA contains foundational principles of South African environmental law which apply to all state actions which may significantly affect the environment. Section 2(4)(a) of NEMA defines sustainable development in reference to the mitigation hierarchy. The South African iteration of the mitigation hierarchy requires that environmental damage<sup>65</sup> is (in order):

1. Firstly avoided,
2. Secondly, minimised where damage is unavoidable, and
3. Thirdly, that such unavoidable harm is remedied once it has occurred.

Avoidance of harm relates to well considered 'spatial or temporal placement'<sup>66</sup> and consideration of the 'no-go' option. This means that developers are sensitive to selecting a location or delaying the commencement of construction in order to avoid and reduce environmental damage. The no-go option refers to the decision of the authorities to refuse to authorise a development if the resultant degradation is unjustified. Minimisation efforts seek to reduce the 'duration, intensity or extent'<sup>67</sup> of impacts on biodiversity meaning that unavoidable environmental harm is reduced in all ways possible.

Prior application of the mitigation hierarchy means that biodiversity offsetting would only be considered once environmental harm has been avoided, minimised where unavoidable, and remedied where it has occurred. Such offsets can be described as a "last resort" to be considered only after all reasonable measures have been taken in to avoid, minimise and restore.

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<sup>64</sup> The mitigation hierarchy is a central tenet in the Convention of Biological Diversity and forms the basis for environmental best practice internationally. See IUCN *Independent report on biodiversity offsets* 10.

<sup>65</sup> In particular, section 2(4)(a) applies the mitigation hierarchy to disturbance or degradation of ecosystems, loss of biological diversity, pollution, disturbance of landscapes and generation of waste.

<sup>66</sup> BBOP *Standard on Biodiversity Offsets* 1.

<sup>67</sup> BBOP *Standard on Biodiversity Offsets* 1.

Where the harm caused cannot be remedied, a biodiversity offset could compensate the damage. Biodiversity offsets would typically fit into the scheme after the third stage of the mitigation hierarchy where rehabilitation or restoration is required, but they may also attempt to reduce the environmental impact of a development in the second stage of the hierarchy. BBOP describes the forms which such an offset might take as “positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, protecting areas where there is imminent or projected loss of biodiversity.”<sup>68</sup>

BBOP is careful to emphasise that biodiversity offsets should never replace the prior avoidance, minimisation and remedying of environmental damage for a proposed development.<sup>69</sup> Strict adherence would prevent authorities permitting highly environmentally detrimental projects in exchange for conservation efforts elsewhere.<sup>70</sup>

### **2.3.2 Other principles of offsetting**

Other important additional principles which are essential to offsetting are considered below.

Firstly limits must be determined as to what can be offset.<sup>71</sup> The extinction of a species for instance can never be offset.<sup>72</sup> Authorities should set strict parameters for what environmental damage may never be authorised through offsetting. Such limits can relate to the type of loss (for instance how close to threatened or endangered a species is, how unique it is, how important to a functioning ecosystem or what benefits humans may derive from its undisturbed existence) or the extent or location of the loss. It has been suggested that biodiversity offsets are, for instance, not appropriate

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<sup>68</sup> BBOP *Standard on Biodiversity Offsets* 1.

<sup>69</sup> BBOP *Standard on Biodiversity Offsets* 17.

<sup>70</sup> BBOP *Standard on Biodiversity Offsets* 1.

<sup>71</sup> See BBOP *Resource Paper: Limits to What Can Be Offset* 2.

<sup>72</sup> IUCN *Independent report on biodiversity offsets* 17.

in the context of large land clearing for agricultural purposes.<sup>73</sup> Such parameters should be carefully considered in setting limits in terms of industry or ecosystems which may not be the subject of offset agreements.

With regards the nature of the actual offset, three principles are important in ensuring an offset is appropriate. Firstly, an offset must be equivalent to what loss will occur through the development.<sup>74</sup> As discussed in 2.2.1 above, equivalence relates to balancing the ecological harm in 'type, amount, quality, time and space.'<sup>75</sup> This requirement is related to the limits for what can be offset (as there could be no equivalent offset for the extinction of a species) and the no net loss requirement (as there *would* be net loss should a species or ecosystem cease to be viable). Equivalence is a necessary consideration when determining like-for-like offsets.<sup>76</sup> It is also the most contentious of the technical design aspects of offsetting.<sup>77</sup>

A biodiversity offset should last for as long as the environmental harm lasts.<sup>78</sup> Construction and infrastructure development generally cause permanent damage and therefore the offset should last in perpetuity.<sup>79</sup> Long-term outcomes require ongoing monitoring and a flexible management so as to adapt to unforeseen environmental or social factors years after the establishment of the offset.<sup>80</sup>

Careful consideration of these fundamental principles should be given when establishing a legal regime regulating biodiversity offsets in South Africa. These principles would shape the regime and have important

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<sup>73</sup> Gardner et al 2013 *Conservation Biology Journal* 5.

<sup>74</sup> BBOP *Standard on Biodiversity Offsets* 18.

<sup>75</sup> IUCN *Independent report on biodiversity offsets* 20.

<sup>76</sup> Ten Kate et al *Biodiversity Offsets* 59.

<sup>77</sup> IUCN *Independent report on biodiversity offsets* 20.

<sup>78</sup> McKenney & Kiesecker 2010 *Environmental Management* 172; Bull et al 2013 *Fauna & Flora International* 5.

<sup>79</sup> BBOP *Standard on Biodiversity Offsets* 21.

<sup>80</sup> BBOP *Standard on Biodiversity Offsets* 21.

implications for all parties involved. Principles involved in a regime would guide design elements of the regime in the same way that the section 2 NEMA principles guide NEMA's regulatory scheme.

## **2.4 Models of biodiversity offsets**

In order to lay a foundation for determining which model would be most appropriate in the South African regulatory context, the different models for implementing biodiversity offsets will be discussed briefly.

Not only does the content of an offset need to be flexible depending on the nature of the environmental harm done, but in jurisdictions which have established biodiversity offsetting schemes, the method, timing and the kind of activities that 'count' as offsets are numerous.<sup>81</sup> Biodiversity offsets can be achieved by a wide variety of methods. Some examples of commonly used biodiversity offset mitigation measures are: increasing a particular property's security against land use change, in the long term, by restoring or repairing degraded areas, improving management, or preventing likely transformation or degradation of areas through formal or legal protection.<sup>82</sup>

### **2.4.1 Voluntary or mandatory offset schemes**

While this thesis is concerned with mandatory offsets imposed in a permitting regime it must be held in mind when considering other biodiversity offset regimes that many countries allow for developers to voluntarily enter into offset agreements. While the law in these jurisdictions may not require an offset, companies or individuals who voluntarily undertake to implement one are rewarded with tax or other regulatory incentives.<sup>83</sup>

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<sup>81</sup> Ten Kate et al *Biodiversity Offsets* 55.

<sup>82</sup> Botha *Draft Scope Gamsberg Biodiversity Offset Report*.

<sup>83</sup> See below section 4.1.5 for reasons why companies would voluntarily implement a biodiversity offset when not required to by law.

The form of biodiversity offset regime contemplated in this dissertation is akin to countries such as America and Brazil, which include compulsory biodiversity offsetting for certain developments.<sup>84</sup> In terms of the United States' Clean Water Act,<sup>85</sup> developers are legally obliged to implement biodiversity offsets for projects that involve adverse impact to wetlands. A similar system is provided for under the American Endangered Species Act<sup>86</sup> with regards 'conservation banks.'<sup>87</sup> These would be considered mandatory in that a party would not be able to develop land which impacts wetlands or endangered species without implementing an imposed biodiversity offset.

#### **2.4.2 Financial or material offsets**

In jurisdictions with established offset regimes, developers sometimes have the choice to implement an offset themselves or to pay entities to undertake the conservation actions required of them on their behalf.<sup>88</sup> Such entities could be private (such as a non-profit organisation like the World Wildlife Trust, or a commercial mitigation bank- discussed below at 2.4.2.1) or public, such as a government authority tasked with conservation or development obligations. Developers are therefore able to either make a financial contribution – whether to a fund or in order to purchase credits - or materially implement the offset themselves.

##### **2.4.2.1 Mitigation Banking**

When determining what positive environmental steps should be taken in terms of a biodiversity offset requirement, developers are not best placed to make decisions regarding conservation and biodiversity. A team of specialists is typically required to assess impacts of a project and design

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<sup>84</sup> Ten Kate et al *Biodiversity Offsets* 22, 29.

<sup>85</sup> Clean Water Act of 1972, Chapter 404(b)(1).

<sup>86</sup> The Endangered Species Act of 1973.

<sup>87</sup> Ten Kate et al *Biodiversity Offsets* 25.

<sup>88</sup> The United States' Clean Water Act for example provides three options for how such an offset may be implemented: the developer can buy wetland 'credits' from government recognised corporate 'mitigation banks,' the developer could pay public (or private) not-for-profit organisations which are charged with conservation mandates to undertake the required mitigation measures, or the developer could pay a 3rd party which does not fall into the first 2 categories (see Ten Kate et al *Biodiversity Offsets* 23).

an offset agreement. Developers are however, in a position to make financial decisions. With the establishment of biodiversity banks (referred to as mitigation banks in the United States), developers are able to purchase biodiversity credits sold by such banks, rather than embark on conservation efforts themselves.<sup>89</sup> This allows specialists in the appropriate field to design, implement and maintain the required conservation and enhance the success and longevity of the offset. Mitigation banking also minimises operational costs involved in the stages of biodiversity offsetting,<sup>90</sup> and can lead to bigger areas of more viable land being conserved rather than individual offsets on an ad hoc level.<sup>91</sup>

The United States, Australia and certain European countries have developed economies around offsets whereby developers can buy biodiversity credits in a scheme comparable with carbon trading. Many of these jurisdictions with well-established offset legislation require mandatory offsetting for unavoidable environmental harm, and this has spurred the creation of biodiversity, conservation, habitat or wetland 'banks'.<sup>92</sup>

Mitigation banks turn conservation actions into tradable commodities which developers can then purchase to mitigate the environmental damage caused by a development.<sup>93</sup> This form of offsetting generally involves three parties: the developer wishing to purchase biodiversity or wetland credits, the bank itself and the public authority responsible for the imposition and enforcement of an offset's terms.

Mitigation banking requires a central, regulatory body to act as the 'bank' which facilitates the purchase and sale of conservation credits. In many jurisdictions the bank has to be recognised by the government in order to

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<sup>89</sup> Doswald et al *Biodiversity Offsets* 7.

<sup>90</sup> Ten Kate et al *Biodiversity Offsets* 43.

<sup>91</sup> Ten Kate et al *Biodiversity Offsets* 16.

<sup>92</sup> Ten Kate et al *Biodiversity Offsets* 23.

<sup>93</sup> Doswald et al *Biodiversity Offsets* 7.

verify that the mandatory offset is actually being implemented through the purchase of credits by the developer.

A mitigation bank can create credits by completing conservation actions itself or by buying 'credits' from third parties who have, for instance, maintained or rehabilitated endangered species' habitat, or protected wetland from development. The nature and extent of the conservation actions will determine how many credits the action is worth- for instance, the restoration of a highly degraded ecosystem to a functioning habitat for an endangered species would be more valuable than partial restoration or habitat for a species which is not endangered. In wetland banking in the United States, credits are measured in terms of acreage,<sup>94</sup> but often quality, placement, duration of protection and timing will determine the value of a credit.

A side benefit of third parties being able to sell conservation-worthy land to mitigation banks to convert into 'credits' is that a market is created which gives extra value to undeveloped land.<sup>95</sup> This value is important in jurisdictions where the presence of an endangered species or a wetland can mean that development rights would be unlikely to be granted, and that liability on behalf of the property owner to protect the species of wetland can be onerous. Instead of unlawfully removing protected species or draining a wetland, mitigation banks provide an incentive for property owners to enhance conservation rather than develop the land in order to be able to sell it to the offset bank for more money.<sup>96</sup>

#### 2.2.4.2 Challenges in Mitigation Banking

Because offset banking is still a developing concept,<sup>97</sup> there is not yet a demand for biodiversity, wetland or habitat credits which necessarily

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<sup>94</sup> See for example Ten Kate et al *Biodiversity Offsets* 15.

<sup>95</sup> Ten Kate et al *Biodiversity Offsets* 20.

<sup>96</sup> Ten Kate et al *Biodiversity Offsets* 20.

<sup>97</sup> Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies* *Biological Conservation* (2012) 142.

would mean that conserving land and selling it to such a bank would be more profitable to the property owner than developing it.<sup>98</sup> Commentators have also expressed concern over whether offset banking can address market failure.<sup>99</sup> A particular challenge in such banking relates to the financial evaluation of biodiversity (which is considered below).

The evaluation, in monetary terms, of conservation actions is extremely difficult. The enquiry involves multidisciplinary experts in economic and scientific fields in determining the value of a particular conservation action which is to be sold to a mitigation bank. Specialists are also required to determine what environmental harm a particular credit can mitigate through the purchase of the credit. Reliable, current scientific data is also required to determine the extent of environmental impacts or conservation actions.

Implicit in the concept of biodiversity banking is the commodification of nature. In the United States, benefits accrued to humans by nature, such as the purification of water through a wetland or the pollination of plants by insects, are commonly referred to as 'ecosystem services.' The financial value of these ecosystem services can be relatively easily quantified by calculating how much it would cost a business to operate and construct a water purification plant, or hire workers to pollinate agricultural plants should nature no longer be able to perform such functions.

But to ascribe a monetary value to species, ecosystems or habitat based on what it would cost business to perform the function is problematic for many reasons. The cost or replacement may not reflect the true value (monetary or otherwise) of a species. Some species or ecosystems do not perform a valuable function to humans and this should not mean their conservation should not be prioritised. Value is subjective and some

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<sup>98</sup> Ten Kate et al *Biodiversity Offsets* 20.

<sup>99</sup> Ten Kate et al *Biodiversity Offsets* 20.

communities may place a higher value on a particular aspect of nature which differs from those charged with evaluating its worth for banking credits purposes. This commodification of nature and the functions which it performs is a criticism of offsetting discussed further at 4.2.

#### 2.4.2.3 Fund Schemes

In jurisdictions where mitigation banks have not been established, other entities may exist to facilitate biodiversity offsets. It is possible for non-commercial organisations, either public or private, to manage funds earmarked for conservation which developers can contribute to in order to mitigate negative impacts. Organisations such as the WWF or the Endangered Wildlife Trust could facilitate such a fund.

While government authorities are typically responsible for conservation, financial contributions can be problematic in ensuring that the funds are used for the correct and intended purposes.<sup>100</sup> Where public authorities are responsible for issuing permits (such as water use licenses or environmental authorisations) financial contributions from a developer should not be able to influence a decision maker with regards pending applications.

Where no institution exists which could manage a biodiversity offset fund, it is common for developers to set up a trust fund for particular beneficiaries who will be negatively impacted by the development. Such beneficiaries could be affected communities, plant or animal species or ecosystems.

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<sup>100</sup> A related issue to this is that the money generated by most fines, administrative penalties and payments to state Departments is not ring-fenced in legislation to be used within that Department for a particular aim. Generally all money paid to the State goes to a central fiscus which is then later divided nationally between all Departments.

### 2.4.3 In-kind or out-of-kind

Generally, the ultimate aim and best ‘default position’<sup>101</sup> of a biodiversity offset is to replace like with like, meaning that exactly what is destroyed by a development is restored or replaced elsewhere.<sup>102</sup> For example, if a number of trees or a wetland is disturbed, the same number is planted and a wetland ‘replaced’ as near the site of destruction as possible. This is hardly ever possible however due to technical impracticalities - one cannot simply create wetlands, grow trees and introduce ecosystems to a new plot of land.<sup>103</sup>

In-kind offsetting seeks to replace the kind of ecosystem impacted by development- should a wetland be destroyed, a wetland elsewhere should be conserved. Generally, compensation is sought in the direct vicinity from where the disruption occurs, but this might not always be to the benefit of the environment. Small, discrete habitats or conserved areas surrounded by roads or structures may be of little conservation value and not ecologically viable.<sup>104</sup> In circumstances where offsite biodiversity offsetting would be more appropriate it is often difficult to conserve like with like or in-kind offsets.

While like-for-like and in-kind offsets are to be aimed for, it may be possible to offset one kind of environmental damage for another in certain circumstances. An example of this would be the destruction of virgin land offset against the restoration of a wetland. This would be described as an out-of-kind offset. Out-of-kind offsetting may involve the idea of ‘trading up’ whereby loss of biodiversity with a lower value (meaning that it is not threatened or ecologically, socially or commercially valuable) is offset against high value biodiversity (which can be threatened or endangered or contribute valuable ecosystem services). The destruction of a debilitated

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<sup>101</sup> Gardner et al 2013 *Conservation Biology Journal* 9.

<sup>102</sup> Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies Biological Conservation* (2012) 142.

<sup>103</sup> McKenney & Kiesecker 2010 *Environmental Management* 168.

<sup>104</sup> Ten Kate et al *Biodiversity Offsets* 78.

or non-functioning wetland by a development being offset by providing long term protection for vulnerable habitat for an endangered species would be an example of ‘trading up.’

When considering a regulatory biodiversity offset regime in South Africa, authorities would have to consider whether to permit both in-kind and out-of-kind offsets. Should out-of-kind offsets be allowed, they should still have to conform with what principles have been included in the regime. The principles of proportionality and comparability would be important in considering whether an out-of-kind offset would be justifiable.

## **2.5 PARTIES INVOLVED IN BIODIVERSITY OFFSETTING**

The broad spectrum of parties potentially involved in the implementation of an offset agreement could add additional benefits to conservation. It has been suggested that the broader the spectrum of involved stakeholders, and the more thorough the consultation and involvement of parties, the more likely the offset is to succeed.<sup>105</sup>

### **2.5.1 Public Sector Parties**

Because the State is charged with authorising and enforcing environmental licences and permits involved in development, government officials on behalf of a Department will be a party involved in the offset process. This is not necessarily the case in a voluntary offset system, but even where non-mandatory, state institutions charged with research and policy development (such as SANBI in South Africa) could play a valuable role in providing support, data and guidance (provided their legislative mandate allows for this).<sup>106</sup> Furthermore, because the state has a duty to

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<sup>105</sup> IUCN *Independent report on biodiversity offsets* 17.

<sup>106</sup> Ten Kate et al *Biodiversity Offsets* 72.

provide infrastructure, the 'developing' party will often be an organ of state rather than a private party.<sup>107</sup>

### **2.5.2 Private Sector Parties**

Generally the driving force behind the design and implementation of an offset will be a private party who is responsible for initiating a development project which involves negative environmental impact. These private parties could be corporations involved in industry such as mining, agri-business or logging.

The primary parties to a biodiversity offset in the context of a permitting regime would be environmental authorities and the developer. But there are many other private parties who could contribute to its design and implementation.

The involvement of communities and indigenous peoples who are affected by environmental harm caused by a development is essential for the legitimacy and potential success of failure of an offset. There are potential benefits to the developer, the communities and the environment when there is a thorough public participation process facilitating an exchange of information and involvement of affected communities. BBOP as well as some corporations have developed principles and guidance for the involvement of indigenous peoples in biodiversity offsetting is available.<sup>108</sup>

Other private parties who may be involved in the design and implantation include civil society organisations and NGOs who aim to promote conservation or sustainable development and can act as watchdogs in holding the parties to the agreement accountable for their responsibilities.

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<sup>107</sup> For example see the Wild Coast Tolling matter where the South African National Roads Agency (SANRAL) has proposed a biodiversity offset to mitigate negative environmental and cultural impacts of a road proposed by SANRAL.

<sup>108</sup> IUCN *Independent report on biodiversity offsets* 17.

The highly complex nature of a biodiversity offset requires the input of specialists and scientists in a variety of fields. The independence of experts is vital in calculating the actual environmental harm done by a developer and the actual conservation benefits achieved through the offset.

## **2.6 DESIGN CONSIDERATIONS IN A BIODIVERSITY OFFSET REGIME**

The elements considered in Chapter 2 are fundamental design considerations for a biodiversity offset regime. The goal of biodiversity offsetting, the principles involved in achieving these aims, the various models of offsets available as options and the parties involved will all have to be considered when designing a biodiversity regime. For instance whether the regime requires no net loss or net gain of biodiversity may affect which other principles may be compatible and as well as what reporting and monitoring mechanisms are necessary. It must be remembered that design considerations in a biodiversity offset must also be compatible with the broader environmental and Constitutional scheme in South Africa.

### **Chapter 3: SOUTH AFRICA'S REGULATORY ENVIRONMENT**

The previous chapter introduced the fundamental principles and goals of biodiversity offsetting. This chapter questions whether the proposal to implement a dedicated biodiversity offset regime is compatible with South Africa's environmental permitting regime. In order to assess compatibility, the chapter will broadly explore the legislative scheme regulating the environment in South Africa with emphasis on permitting in the environmental context.

Currently, no laws provide expressly for biodiversity offsets in South Africa and there is no formal offsetting regime or even a national policy. However, the laws, principles and policies applicable to biodiversity offsets in South Africa will be examined to see if, and how, a dedicated biodiversity offsetting regime would fit into our regime. Relevant provisions from various Acts<sup>109</sup> are discussed, followed by an analysis of whether a dedicated biodiversity offset regime is compatible with the legislative scheme.

It is suggested that South Africa's framework law is compatible with the concept of a dedicated biodiversity offset regime as demonstrated by the compatibility between certain NEMA principles, the current EIA regime<sup>110</sup> and the Constitutional imperative of sustainable development.

Provisions in the Constitution and environmental legislation relevant to biodiversity offsetting are considered below, followed by a discussion of whether they are compatible with a dedicated biodiversity offsetting regime.

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<sup>109</sup> The National Water Act 36 of 1989, the National Environmental Management: Act 107 of 1998, the Minerals and Petroleum Development Act 28 of 2002, the National Environmental Management: Waste Act 59 of 2008, the National Environmental Management: Biodiversity Act No 10 of 2004, National Environmental Management: Protected Areas Act 57 of 2003 and the National Environmental Management: Air Quality Act 39 of 2004.

<sup>110</sup> As regulated under the EIA Regulations 2014 and the 2014 Listing Notices.

### 3.1 THE CONSTITUTION

The Constitution is the supreme law in South Africa.<sup>111</sup> Section 2 provides that all law and conduct inconsistent with it is invalid. Section 24 contains South Africa's constitutionally enshrined environmental right.<sup>112</sup>

Section 24 is framed as a human right *to* the environment rather than a right for the environment's own sake.<sup>113</sup> The section imposes duties on the State to enact laws aimed at preventing pollution and ecological degradation while encouraging conservation.<sup>114</sup> Section 24(b)(iii) provides that everyone has the right to have the environment protected through measures which "secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development."<sup>115</sup>

While section 24 has not been the central legal provision relied on by parties to a case,<sup>116</sup> it has provided support and weight to many environmentally related cases. The most thorough interpretation of the concepts included in the section 24's wording is contained in the *Fuel Retailers*<sup>117</sup> case, which focussed on the meaning of sustainable development, and the duties of respective authorities charged with making decisions with environmental consequences.

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<sup>111</sup> The Constitution of the Republic of South Africa, 1996.

<sup>112</sup> Section 24 provides that "Everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

<sup>113</sup> See Glazewski *Environmental Law in South Africa Chapter 5.2.2.1* page 5-18.

<sup>114</sup> Section 24(b)(i) and 24(b)(ii).

<sup>115</sup> Section 24(b)(iii).

<sup>116</sup> See Feris *Constitutional Environmental Rights* 14.

<sup>117</sup> *Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* 2007 (10) BCLR 1059 (CC).

### **3.1.1 Compatibility between biodiversity offsets and the Constitution**

The Constitution requires the protection of the environment through legislative and other measures.<sup>118</sup> Such measures should promote conservation and “secure sustainable development and the use of natural resources while promoting justifiable economic and social development.”<sup>119</sup> Biodiversity offsets are compatible with these requirements as a dedicated biodiversity offset regime could constitute a reasonable legislative measure which promotes sustainable development by allowing particular developments to be constructed while imposing conservation actions to ensure no net loss (or possible net gain) of biodiversity.

In terms of the legislative duty imposed on the state, a plethora of Environmental Management Acts has been promulgated, and many more laws tackling specific environmental areas are in operation. Provisions in environmental laws relevant to biodiversity offsetting are briefly discussed below, followed by an analysis of how a biodiversity offsetting regime may be compatible with their import.

### **3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998**

NEMA was enacted in 1998 and constitutes the framework legislation called for by section 24 of the Constitution.<sup>120</sup> What sets environmental law apart from being a branch of administrative or property law is the set of guiding principles contained in section 2 of the Act.<sup>121</sup> All governmental environmental decision-making is to be infused with and interpreted and applied in relation these principles.<sup>122</sup> The Principles apply “throughout the

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<sup>118</sup> Section 24(b).

<sup>119</sup> Section 24(b)(iii).

<sup>120</sup> Kidd M *Environmental Law* (2011) Juta Cape Town.

<sup>121</sup> National Environmental Management Act 107 of 1998.

<sup>122</sup> Section 2 NEMA.

Republic to the actions of all organs of state that may significantly affect the environment.”<sup>123</sup>

The NEMA principles are relevant to biodiversity offsets because they give an indication of what actions (when such actions are not expressly provided for in legislation) could be considered in line with the objects and aims of the Act and hence permissible. A dedicated biodiversity offset regime would therefore have to be compatible with the NEMA principles. The principles also are relevant to environmental decision-makers in that they should guide a competent authorities’ discretion when issuing an authorisation or deciding which conditions to attach to a permit or licence.

### **3.2.1 NEMA Principles relevant to biodiversity offsets**

The principle contained in section 2(3) of NEMA provides that development must be socially, **environmentally and economically sustainable**. The Act gives some guidance as to what factors to consider when deciding what sustainability entails in section 2(4)(a). One factor which manifests itself in the context of ecosystem and landscape disturbance, pollution, environmental degradation, waste and any negative environmental impacts is the application of the **mitigation hierarchy**.<sup>124</sup> The mitigation hierarchy requires negative impacts on the environment to be avoided, and where impossible to avoid, to be minimised and as a final step, remedied.<sup>125</sup> Another factor relevant to the consideration of sustainability is that a risk-averse and cautious approach be applied.<sup>126</sup> This principle requires that the greater the environmental risk, the more cautious decision-makers should be in allowing the activity. Another factor highly relevant to biodiversity offsetting is that contained in section 2(4)(a)(vii) which provides that negative environmental impacts be

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<sup>123</sup> Section 2 NEMA.

<sup>124</sup> See sections 2(4)(a)(i)-(iv) and (vii).

<sup>125</sup> See for instance section 2(4)(a)(i).

<sup>126</sup> Section 2(4)(a)(vii).

anticipated and prevented prior to the application of the mitigation hierarchy.

The 'Polluter Pays' principle is perhaps the most compatible principle relevant to a biodiversity offsetting regime. Section 2(4)(p) provides that those responsible for harming the environment should bear the costs of remedying pollution, environmental degradation and adverse health effects as well as the costs of preventing, controlling or minimising further pollution, environmental damage or health effects.

### **3.2.2 The duty of care**

Apart from the principles, NEMA imposes a general duty of care on all persons to take reasonable measures to prevent pollution or environmental degradation,<sup>127</sup> and imposes liability for ecological harm on a wide range of persons responsible for the harm.<sup>128</sup>

The duty of care is relevant to biodiversity offsetting for several reasons. It contains an implicit mitigation hierarchy (to prevent pollution or degradation occurring, continuing or recurring and where it cannot be prevented, to minimise and rectify such degradation). The duty of care is a powerful tool which can be used to hold those responsible for degradation to account financially or materially. It continues to apply to those who hold environmental authorisations.<sup>129</sup> This means that it would continue to apply to those who have been granted authorisation for a development subject to the implementation of a biodiversity offset. Should a biodiversity offset fail to materialise the conservation actions required in terms of its condition, the duty of care could require additional actions on the developer's behalf to rectify or remediate significant environmental degradation.

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<sup>127</sup> NEMA section 28.

<sup>128</sup> NEMA section 28(2) and (3).

<sup>129</sup> The wording of section 28 provides that the duty of care applies to all persons who have caused or may cause significant environmental harm.

It is debatable whether the duty of care could also be used to promote the concept of biodiversity offsetting with regards the requirement that where environmental degradation which has been authorised by law such harm should be minimisation and rectified.<sup>130</sup> An offset could be seen to 'minimise' environmental damage. In terms of the mitigation hierarchy in section 2, those who cause significant environmental harm are in any case obliged to minimise and remedy the harm. A biodiversity offset would only follow such actions and should not constitute a step in the hierarchy.

### 3.2.3 South Africa's EIA Regime

NEMA is the empowering legislation for South Africa's Environmental Impact Assessment (EIA) regime. Section 24 of NEMA provides that impacts on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority. Section 24(2) empowers the authority to identify activities which may not commence without authorisation from the authority (the so-called 'listed activities'). The wording of this provision is important in considering whether authorities are empowered to impose biodiversity offset conditions when granting environmental authorisation. In this regard, section 24(1) requires only the potential consequences for (or impacts on) the environment of the *listed activity* to be assessed when considering whether to grant environmental authorisation. Section 24(4) provides guidance on the procedures for the assessment of impacts of a development and section 24(4)(b)(ii) provides that an application for environmental authorisation includes an investigation of mitigation measure "to keep adverse consequences or impacts to a minimum."

Glazewski suggests that section 24(4)(b)(ii) of NEMA does not provide for offsets or compensation as the provision only contemplates the second

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<sup>130</sup> Section 28(1).

stage in the mitigation hierarchy, the reduction of environmental harm.<sup>131</sup> This has potentially significant implications for a biodiversity offset regime as it means that in terms of the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment, currently there is no currently need to go beyond minimising impacts or to remedy such impacts.<sup>132</sup>

This raises a fundamental issue in assessing whether a dedicated biodiversity offset regime would be compatible with South African law. If NEMA does not provide for biodiversity offsets, a dedicated offset regime would require both an amendment to the framework environmental legislation in South Africa in addition to regulations made in terms of it. This would also mean that the legality of any biodiversity offsets currently imposed in terms of the existing legislative scheme may be challenged.<sup>133</sup>

It is submitted that the section 2 principles in NEMA in any case require the prior application of the mitigation hierarchy for potential or actual environmental harm.<sup>134</sup> Regulation 2 of the 2014 EIA Regulations provides that the purpose of the Regulations is inter alia “to avoid or mitigate detrimental impacts on the environment and to optimise positive environmental impacts.”<sup>135</sup> The fact that South Africa’s legislative scheme requires prior application of the mitigation hierarchy is entirely compatible with offsetting. A dedicated biodiversity offset regime would only apply once measures to avoid, reduce and remedy harm had already been investigated and implemented. Glazewski’s opinion therefore may have implications for biodiversity offsets currently imposed, but would not affect the introduction of a dedicated biodiversity offset regime.

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<sup>131</sup> Glazewski *Environmental Law in South Africa Chapter 10.3.2.1* page 10-18.

<sup>132</sup> Glazewski *Environmental Law in South Africa Chapter 10.3.2.1* page 10-18.

<sup>133</sup> Such a challenge could be based on a condition requiring an offset being ultra vires.

<sup>134</sup> See NEMA section 2(4).

<sup>135</sup> GNR 982 in GG 38282 of 04-12-2014.

Section 24(5)(d) is the only provision in NEMA which relates to conditions which may be attached to an environmental authorisation. It provides that the competent authority may make regulations requiring the provision of financial or other security to cover the risks to the State and the environment of non-compliance with conditions attached to environmental authorisations. While this is relevant in considering whether the biodiversity offsets currently imposed in conditions of authorisations in South Africa are lawful, this thesis is more concerned with the development of a formalised biodiversity offset regime and not whether the current situation is lawful.

Section 24 of NEMA and the Environment Impact Assessment (EIA) Regulations, 2014 provide for South Africa's EIA regime.<sup>136</sup> In terms of the regime, developments with potentially significant environmental impact require authorisation from environmental authorities prior to construction.<sup>137</sup>

Regulation 26 of the Environmental Impact Assessment Regulations, 2014 specifies the content of an environmental authorisation.<sup>138</sup> Regulation 26(d) requires that such an authorisation contain the conditions subject to which the authorised activity is to be undertaken. The conditions referred to in this provision include the period of authorisation and in which commencement of the activity must begin, requirements for the avoidance, management, mitigation, monitoring and reporting of the impacts of the activity on the environment throughout the lifecycle of the activity.<sup>139</sup>

Section 24 of NEMA provides guidance on what the EIA process may entail with regards the investigation, assessment and reporting procedures required.

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<sup>136</sup> GNR 982 in GG 38282 of 04-12-2014.

<sup>137</sup> Section 24 of NEMA.

<sup>138</sup> GNR 982 in GG 38282 of 04-12-2014.

<sup>139</sup> Regulation 261(d) of GNR 982 in GG 38282 of 04-12-2014.

Whether a biodiversity offset regime is compatible with the above provisions relevant to offsetting is considered at 3.4 below.

### **3.3 OTHER RELEVANT SOUTH AFRICAN LEGISLATION**

In addition to environmental authorisations, there are many other examples of laws in South Africa that allow authorities to attach conditions when granting a licence or permit for activities which have an adverse environmental impact. Biodiversity offsets may also be included as a permit condition in terms of these laws. The laws which are relevant to offsetting are briefly discussed below.

#### **3.3.1. National Water Act 36 of 1998**

Part 7 of The National Water Act (NWA) provides for the granting of water use licences. Section 22(2)(a) requires that licensed water use is subject to any condition imposed by the authority in the authorisation, and section 22(b) provides that the water use is subject to any limitation, restriction or prohibition in terms of the NWA or any other applicable law. Use of water is defined broadly in the NWA and includes the taking, storing, impeding, reducing or disposing of water<sup>140</sup> - all of which have potential negative residual environmental impacts that cannot be avoided by application of the mitigation hierarchy. While the NWA does not require licences for all water uses, large developments which use significant water resources (such as mining operations) are required to apply for use licenses from the Department of Water Affairs and Sanitation.

Section 19 of the NWA imposes a duty of care with regards the pollution of water resources. Persons responsible for water pollution are required to take all reasonable measures to prevent pollution occurring, continuing or recurring.<sup>141</sup> Section 19(2) provides what measures may be required in order to achieve this- including the elimination of pollution sources and the

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<sup>140</sup> Section 21 of the National Water Act.

<sup>141</sup> Section 19(1).

remediation of the effects of any pollution.<sup>142</sup> Section 19 therefore incorporates all the element of the mitigation hierarchy with regards water pollution (i.e. the prevention, minimisation and remediation of water pollution).

### **3.3.2 Minerals and Petroleum Resources Development Act 28 of 2002**

Mining is a vital component of South Africa's economy due to the country's rich mineral resources. Biodiversity offsets are frequently required in the context of mining.<sup>143</sup> This is partly because mining causes enormous ecological damage, and because of the lucrative nature of mining which enables mining corporations to contribute large amounts of money to offsetting.

In terms of the legislative scheme regulating mining and prospecting, many authorisations from different authorities are required. These include local authorities empowered to make zoning and land use planning decisions, water authorities who grant water use licences and environmental authorities who are empowered to grant environmental authorisation in terms of an adapted EIA process for mining. Water use licences and environmental authorisations are typically the vehicles through which a biodiversity offset is required.

Section 37 of the MPRDA provides that the NEMA section 2 principles apply to all prospecting and mining operations and that mining activities should be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects. This is to ensure that exploitation of mineral resources serves present and future generations.<sup>144</sup>

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<sup>142</sup> Section 19(2)(d) and (e).

<sup>143</sup> See for example the offset agreements being negotiated for mining operations in Mapungubwe by Coal of Africa, and the Gamsberg Zinc mining by Vedanta Resources discussed below.

<sup>144</sup> Section 37(1) and (2).

Many mining corporations have developed internal policies on biodiversity offsetting. A guideline for mainstreaming biodiversity in the mining sector was published by the DEA in 2013.<sup>145</sup> It recognises that biodiversity offsets are an option for the mitigation of unavoidable environmental harm<sup>146</sup> in facilitating the mainstreaming of biodiversity and integrating biodiversity considerations in mining decision making, management and planning. The Guideline specifies that the imposition of a biodiversity offset in a permit or authorisation is more likely to occur where there are significant impacts to areas of moderate and high biodiversity importance.<sup>147</sup> It also promotes thorough public participation in decision-making related to a proposed mining project which includes stakeholder input on the identification of areas which would be suitable for the implementation of a biodiversity offset agreement.<sup>148</sup> It is encouraging that the guideline expressly recognises that there are “irreplaceable or non-offsettable” ecosystems.<sup>149</sup> Recognition of mining’s dependence on functioning ecosystems is also encouraging. The Guideline provides that ‘like for like’ or ‘in-kind’ offsets should generally be aimed for, but that biodiversity of a higher conservation significance may also be required.<sup>150</sup> The Guideline goes some way to describe what biodiversity offsetting may entail and gives valuable guidance on the possible content of offsets. Formal protection of identified offset areas is called for, and some of the methods of securing protection are discussed.<sup>151</sup>

### **3.3.1 Specific Environmental Management Acts**

The NEMA principles addressed above apply to all ‘Specific Environmental Management Acts’ (SEMA) which are defined in section 1

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<sup>145</sup> Department of Environmental Affairs, *Mining and Biodiversity Guideline* 2013.

<sup>146</sup> Department of Environmental Affairs, *Mining and Biodiversity Guideline* 17.

<sup>147</sup> Department of Environmental Affairs, *Mining and Biodiversity Guideline* 29.

<sup>148</sup> Department of Environmental Affairs *Mining and Biodiversity Guideline* 47.

<sup>149</sup> Department of Environmental Affairs *Mining and Biodiversity Guideline* 50.

<sup>150</sup> Department of Environmental Affairs *Mining and Biodiversity Guideline* 54.

<sup>151</sup> See footnote 75 in Department of Environmental Affairs, *Mining and Biodiversity Guideline* 55.

of NEMA and which were enacted to regulate coastal and marine management and biodiversity, waste and heritage management.<sup>152</sup>

### 3.3.3.1 The National Environmental Management: Integrated Coastal Management Act

The National Environmental Management: Integrated Coastal Management Act (NEMICMA)<sup>153</sup> provides for various permits and authorisations relating to development impacts on the marine and coastal environment. Coastal waters discharge permits in terms of section 69 and dumping permits in terms of section 71 are provided for, and authorities are empowered to impose conditions in terms of these permits. The NEMA section 28 duty of care is extended in section 58 of NEMICMA to encompass the avoidance, minimisation and rectification of adverse effects on the coastal environment.<sup>154</sup>

### 3.3.3.2 National Environment Management: Waste Act 59 of 2008

The National Environment Management: Waste Act (NEMWA) requires that certain waste management activities require waste management licences.<sup>155</sup> Like NEMA, NEMWA emphasises the mitigation hierarchy in relation to waste.<sup>156</sup> Section 16(1) imposes a general duty on holders of waste to avoid the generation of waste, to minimise the amount and toxicity of waste where unavoidable, and to reduce, re-use, recycle and

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<sup>152</sup> Section 1 of NEMA defines a Specific Environmental Management Act as including the following:

- The Environmental Conservation Act 73 of 1989
- The National Water Act 36 of 1989
- The World Heritage Convention Act 49 of 1999
- National Environmental Management: Waste Act 59 of 2008
- National Environmental Management: Biodiversity Act No 10 of 2004
- National Environmental Management: Protected Areas Act 57 of 2003
- National Environmental Management: Air Quality Act 39 of 2004
- The World Heritage Convention Act 49 of 1999

<sup>153</sup> Act 24 of 2008.

<sup>154</sup> Section 58(1) of NEMICMA and section 28 of NEMA.

<sup>155</sup> Section 20 NEMWA.

<sup>156</sup> See section 16.

recover waste.<sup>157</sup> Section 2(4)(a)(iv) of NEMA also requires that waste is avoided, minimised, re-used or recycled before being disposed.

### 3.3.3.3 National Environment Management: Air Quality Act 39 of 2004

Section 39 of the National Environment Management: Air Quality Act 39 of 2004 (NEMAQA) provides for the factors which are into account by licensing authorities when considering an application for an atmospheric emission licence by the licensing authority. One of the factors which must be considered is the best practicable environmental options available that could be taken to prevent, control, abate or mitigate that pollution.<sup>158</sup>

## 3.4 COMPATIBILITY BETWEEN BIODIVERSITY OFFSET REGIME AND LEGISLATIVE FRAMEWORK

South Africa's environmental legislative and permitting regime is compatible with biodiversity offsetting in that the following aspects are emphasised in both:

- Sustainable development
- Polluter pays principle
- Precautionary principle
- Mitigation hierarchy
- Duties of care
- Procedural compatibility

### 3.4.1 Sustainable development

Sustainable development is a central concept in the theory of biodiversity offsetting in that it recognises both the value of biodiversity and the need for development and seeks to compensate for environmental harm done through development.<sup>159</sup> The link between biodiversity offsets and

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<sup>157</sup> Section 16(1)(a)-(b).

<sup>158</sup> Section 39(c).

<sup>159</sup> See Ten Kate et al *Biodiversity Offsets* 10, and 78; Kiesecker J et al 2010 Development by design: blending landscape-level planning with the mitigation hierarchy. *Frontiers in Ecology and the Environment* 261.

sustainable development is discussed further at 4.1 below. The explicit recognition of the concept sustainable development in the Constitution could be seen as a foundational compatibility between the biodiversity offsetting and constitutional imperatives. The second of the NEMA principles requires that development be sustainable.<sup>160</sup> This shows further harmony between the ideals of offsetting, the Constitution, NEMA as the framework for environmental legislation in South Africa and the SEMAS.<sup>161</sup>

### 3.4.2 Mitigation hierarchy

As discussed at 2.3.1 above, an essential aspect of a biodiversity offset is that it should occur only after prior application of the mitigation hierarchy.<sup>162</sup> The fact that NEMA expressly provides for, and emphasises the mitigation hierarchy in the section 2 principles demonstrates procedural and substantial compatibility between South African legislation and a biodiversity offsetting regime. Such a regime could utilise existing provisions without having to introduce a new concept to environmental legislation.

Glazewski's opinion that section 23 and 24(4) of NEMA only require that environmental impacts be minimised rather than remedied does not show incompatibility between NEMA and offsetting.<sup>163</sup> Glazewski submits that "offsets and compensation as a mitigation measure" were "overlooked,"<sup>164</sup> which is precisely why a dedicated regime is required in order to clarify this. Offsetting would not be incompatible with NEMA and the EIA Regime's iteration of the mitigation hierarchy; it would simply impose an additional stage once the steps in the hierarchy have been implemented by the developer.

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<sup>160</sup> Section 2(3).

<sup>161</sup> For more on the concept of sustainable development see Sands P *Principles of International Environmental Law* (2003) 252-66.

<sup>162</sup> McKenney & Kiesecker 2010 *Environmental Management* 167.

<sup>163</sup> Glazewski *Environmental Law in South Africa Chapter 10.3.2.1* page 10-18.

<sup>164</sup> Glazewski *Environmental Law in South Africa Chapter 10.3.2.1* page 10-18.

### 3.4.3 Other NEMA Principles

The recognition of the polluter pays principle and the precautionary principle in section 2 of NEMA is also consistent with biodiversity offsetting in that any offset imposed by an authority is to be implemented at the expense of the developer (who is the “polluter”) and that the greater the risk of environmental harm, the greater the amount required to be offset in terms of the precautionary principle.<sup>165</sup> The latter may also provide guidance as to what limits should be in place as to what should not be capable of being offset (i.e. which actions should not be authorised if the environmental risk is too great).

The compatibility between the NEMA principles and an offset regime is supported by the objectives in the KwaZulu Natal Guideline for Biodiversity Offsets.<sup>166</sup> The latter provides that “offsets are seen as a mechanism to give effect to a number of the NEMA principles, including the remedying of impacts on biodiversity and protecting ecological integrity, and demonstration of the polluter pays in particular: the costs of cumulative impacts on natural systems and ongoing erosion of natural capital are currently being borne by society as externalities, rather than by those responsible for these impacts.”<sup>167</sup>

It is submitted that all of the NEMA principles would be extremely valuable in a biodiversity offsetting regime and should be given thorough consideration prior to the design of any offset. An offset should be motivated in terms of the principles and only implemented where consistent with them.

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<sup>165</sup> However, it must be noted that the wording of the principle contained in section 2(4)(p) of NEMA provides that the costs of “remedying” environmental degradation be borne by the polluter, and, it could be argued that an offset would not constitute a ‘remedy’ but a different sort of compensatory action.

<sup>166</sup> See also the Ezemvelo KZN Wildlife (2009) Norms and Standards for Biodiversity Offsets: KwaZul-Natal Province, South Africa.

<sup>167</sup> *Concise Guideline for Biodiversity Offsets: KwaZulu Natal Province 2.*

#### 3.4.4 Duties of Care

The duty of care in section 28 of NEMA recognises that significant environmental harm may be authorised in terms of a permit, licence or authorisation, but provides that the duty to prevent, minimise and rectify the harm done remains. As with the wording of the polluter pays principle, it can be argued that the “rectification” required of those authorised to conduct activities which result in environmental harm could extend to the implementation of a biodiversity offset.

The duties of care contained in the NWA, NEMAQA and NEMICMA also require that environmental harm first be avoided, minimised where unavoidable, and lastly remedied.<sup>168</sup> This too is compatible with the mitigation hierarchy and the consensus in offset policies that an offset is appropriate only once these steps have been completed.<sup>169</sup>

#### 3.4.5 Procedural compatibility

The primary vehicle for the introduction of a formal biodiversity offsetting regime into South Africa’s environmental law scheme would be through the EIA regime and other processes which require environmental permits, licences or authorisations. The assessment and authorisation process is entirely consistent with the concept of a biodiversity offsetting regime for many reasons.<sup>170</sup> An offset requires in-depth knowledge of the impact of a proposed development so as to better calculate the nature and extent of the mitigation required. EIAs are typically conducted by a range of specialists - from experts in geology, ecology and hydrology to experts in social or cultural impacts. Such environmental impact assessment reports are submitted precisely in order to quantify the effects of the proposed development for decision-makers. Authorities are therefore equipped to

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<sup>168</sup> See section 3.3 above.

<sup>169</sup> McKenney & Kiesecker 2010 *Environmental Management* 167.

<sup>170</sup> See BBOP 2009 *The Relationship between Biodiversity Offsets and Impact Assessment: Resource Paper*, Washington, D.C. for more detail on the compatibility between EIA regimes and biodiversity offsetting.

decide whether the negative environmental impact is justified or not, and whether to grant the authorisation under what conditions.

### **3.5 CONDITIONS IN AUTHORISATIONS**

While the concept of offsetting may be compatible with the EIA regime, it should be considered whether the law as it currently stands allows for authorities to impose mandatory biodiversity offsets when issuing an authorisation, or whether separate regulations or amendments to legislation are required in instituting a formal biodiversity regime. The provisions allowing conditions to be attached to environmental authorisations are the most obvious setting for the inclusion of an offset in terms of the proposed the regulatory regime. However, it is submitted that as the law currently stands, the provisions relating to the attachment of conditions in NEMA and the EIA Regulations (that is, section 24(5) in NEMA and Regulation 26(d)(iv) in the EIA Regulations 2014) do not clearly allow for a biodiversity offset as condition of authorisation. This is for several reasons addressed below.

Authorities may only impose conditions which empowering legislation or the common law allows them to.<sup>171</sup> This means that the law must confer on the competent authority the ability to impose an offset condition either expressly or implicitly. The imposition of a condition, which the authority was not empowered to impose, constitutes administrative action that may be judicially reviewed in terms of the Promotion of Administrative Justice Act 3 of 2000 (PAJA).<sup>172</sup> To avoid expensive and protracted judicial review proceedings, competent officials should be confident in their authority to impose such conditions.

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<sup>171</sup> *Fedsure Life Assurance Ltd v Greater Johannesburg Transitional Metropolitan Council* 1999 (1) SA 374 (CC) [58].

<sup>172</sup> Section 6(2)(a) provides that any person may institute proceedings in a court for the judicial review of administrative action if the administrator who took it was not authorised to do so by the empowering provision.

NEMA provides little guidance on what types of conditions may be attached to an environmental authorisation. The EIA Regulations 2014 indicate that conditions determining the requirements for the avoidance, management, *mitigation*, monitoring and reporting of the impacts of the activity on the environment throughout the life of the activity may be included (emphasis added).<sup>173</sup> Mitigation is defined as “to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible” in Regulation 1.<sup>174</sup> It is not clear to what extent a biodiversity offset could constitute “rehabilitation or repair” in terms of a condition requiring “mitigation” of impacts in terms of the 2014 EIA Regulations. However, Regulation 26(i) provides that “any relevant condition which the competent authority deems appropriate” may be included in the environmental authorisation. While there is therefore no express provision for an offset condition, it is submitted that the wording of Regulation 26(i) is wide enough to allow for a biodiversity offset being lawfully included as a mandatory and enforceable condition of an environmental authorisation issued in terms of the current EIA regime.

South African courts have considered the attachment of problematic conditions in environmental authorisations in South Africa, and there is therefore some judicial guidance regarding the nature and content of permissible conditions.<sup>175</sup>

Although no express regime for biodiversity offsetting exists at present the current practice (imposed through the 2010 EIA Regulations predominantly)<sup>176</sup> could still be considered lawful.<sup>177</sup> The authorisation

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<sup>173</sup> Regulation 26(d)(iv) in GNR 982 in GG 38282 of 02/12/2014.

<sup>174</sup> Regulation 1 in GNR 982 in GG 38282 of 02/12/2014.

<sup>175</sup> See for example *SLC Property Group (Pty) Ltd v The Minister of Environmental Affairs and Economical Development* (“*SLC Property Group*”).

<sup>176</sup> Environmental Impact Assessment Regulations, 2010 in GN R543 in Government Gazette 33306 of 18 June 2010. Listing Notices 1, 2 and 3 in GNR 544, GNR 545 and GNR 546 in Government Gazette 33306 of 18 June 2010.

<sup>177</sup> See *Hangklip/Kleinmond Federation of Ratepayers Associations v Minister for Environmental Planning & Economic Development, Western Cape*<sup>177</sup> (“*Arabella*”) which concerned trust fund and housing conditions imposed in an environmental authorisation. The Court reiterated that a decision maker is empowered to

which was disputed in *Arabella Hangklip/Kleinmond Federation of Ratepayers Associations v Minister for Environmental Planning & Economic Development, Western Cape* included a biodiversity offset condition that required preservation of 30 hectares of high and moderate conservation land.<sup>178</sup> This condition was not contested by the applicant but the Court nevertheless held that it was permissible because it related “directly to an environmental impact of the proposed activity, the destruction of 30 hectares of habitat.”<sup>179</sup> The Court however cautioned that because the offset condition was not challenged in *Arabella*, the concept of “mitigation banking” would have to be “considered more closely at some future stage.”<sup>180</sup> Furthermore, because of serious procedural and other irregularities in the decision-making process, the entire environmental authorisation was set-aside by the Court.<sup>181</sup> It must also be held in mind that the *Arabella* decision was made in the Western Cape High Court and would only therefore be persuasive in other provinces in South Africa. Biodiversity offsets have not been considered by the Supreme Court of Appeal or the Constitutional Court of South Africa.

In light of *Arabella* and *SLC Property Group* decisions, it would therefore seem that environmental decision makers would be able to impose a condition in an environmental authorisation provided that its requirements

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impose such conditions which they deemed necessary, “provided that such condition is within the authority given to her under the provisions of the ECA read with the relevant provisions of NEMA.” The Court affirmed the principle that there needs to be a rational connection between the decision itself and the purpose for which the decision maker was given the power to decide. Louw J held that the Minister was “entitled to adopt conditions with regard to [environmental and socio-economic] impacts to reduce adverse impacts and increase beneficial impacts, but that she could not concern herself with “extraneous matters” by which was meant matters other than those relating to impacts of the listed activity. The Court once again had to consider whether the purpose “sought to be achieved by the exercise of her power” was within the Minister’s authority in terms of the empowering legislation. Louw J considered whether contributions to trust funds and the construction of low-cost housing could be included in the consideration of the impact of the listed activity. This would mean consideration of the proposed development as a whole (including any proposed mitigation measures) and not just the impacts of the listed activity. The Court rejected this argument and held that the law authorises the competent authority to consider only those impacts associated with the listed activity.

<sup>178</sup> Para [67].

<sup>179</sup> Para [67].

<sup>180</sup> Para [67].

<sup>181</sup> Para [147].

are directly related to the environmental impact of the listed activity. The terms of a biodiversity offset condition would have to be closely linked to the impact of the listed activity so as to fall within the bounds of permissible conditions which the competent authority is empowered to impose.

While the current practice may be lawful, a dedicated biodiversity offset regime would avoid challenges to the imposition of offsets and provide clarity on the powers of the authority with regards their design, implementation and enforcement. Because no dedicated biodiversity offset regime exists at the moment there is no clarity on the fundamental design elements that were explored in Chapter 2 (i.e. whether to require no net loss or net gain or to impose material versus financial offsets) in biodiversity offsets under the current ad hoc system.

It must also be held in mind that biodiversity offsets operate within the boundaries of environmental laws which have been enacted in to protect the natural environment. The mitigation hierarchy is already entrenched in environmental law in South Africa though the NEMA principles. In addition to legislation aimed at preventing ecological degradation, South African law provides a robust system for the review of administrative decisions (such as the granting of an authorisation subject to a biodiversity offset) which is used regularly by parties to challenge the justifiability of such decisions.<sup>182</sup>

The idea that endangered species will be destroyed or that last remaining habitat compromised in exchange for conservation actions elsewhere is unlikely to occur with proper prior application of the mitigation hierarchy. The hierarchy requires that environmental harm is avoided, minimised where unavoidable, and repaired where possible *before* considering an

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<sup>182</sup> Section 6 (2) of the Promotion of Administrative Justice Act 3 of 2000 provides the grounds on which administrative decisions may be challenged by parties with an interest in the decision.

offset.<sup>183</sup> Should the proposed site of development constitute endangered habitat it is unlikely that environmental authorities would issue the requisite permits needed for the development to be built in the first place. South Africa has comprehensive environmental and land use planning legislation which regulates development in biologically sensitive areas which should be applied fully prior to consideration of a biodiversity offset.

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<sup>183</sup> Part of the 'minimise' or 'repair' stage in the mitigation hierarchy would be the translocation of such species or the so-called 'search and rescue' condition.

## **Chapter 4: THE PROS AND CONS OF BIODIVERSITY OFFSETS**

It has been submitted that while South African legislation does not currently expressly provide for a biodiversity offset regime, the concept is compatible with many of the fundamental principles in South African environmental legislation. This chapter will deal with whether such a proposal should be implemented in South Africa. The arguments in favour and opposing the introduction of biodiversity offsets in the South African permitting regime will be discussed. Examples of how biodiversity offsets are currently being implemented in South Africa will be examined to show whether they are being used appropriately and whether the positive attributes outweigh the negative implications. It will be suggested that arguments in favour of a regulated biodiversity offset regime are persuasive and that the current content of offsets in terms of the ad hoc system has failed to give effect to basic requirements of offsetting and presents a concerning precedent if allowed to continue.

### **4.1 Arguments in favour**

#### **4.1.1 Sustainable development**

Biodiversity offsets potentially could play an important role in striving towards and realising, sustainable development.<sup>184</sup> They have the potential to facilitate development while enhancing conservation.<sup>185</sup> Advocates of the scheme consider biodiversity offsets a tool with which to promote development while ensuring no-net loss of biodiversity in an efficient and effective compromise between economic and environmental concerns. Human populations continue to increase and more pressures continue to be placed on the biodiversity and ecosystems due to human civilisation. Most would agree that development is essential, especially in

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<sup>184</sup> Ten Kate et al *Biodiversity Offsets* 79. See also New South Wales Government. 2002. *Green offsets for sustainable development*. Concept paper. Environment Protection Authority, Sydney. 2002 and Bull et al *Fauna & Flora International* 1.

<sup>185</sup> Bull et al 2013 *Fauna & Flora International* 1.

South Africa, and that some residual environmental harm is an unavoidable impact of development. Proponents of biodiversity offsetting believe that it is a way of mitigating such harm while facilitating sustainable development with benefits to all parties involved as well as the environment.

#### **4.1.2 Increase in knowledge**

By requiring baseline and expert studies, biodiversity offsets also can lead to a better understanding of ecosystems and biodiversity as well as impacts of development on the environment. Unintended benefits of an offset regime include a better scientific knowledge of particular species and ecosystems which are the subject of an offset. Another benefit to conservation would be the generation of information as a result of specialist studies conducted in the offset process. In order to determine the effect of a proposed development on biodiversity multidisciplinary assessments are required from a range of environmental specialists. Knowledge gained through this process is valuable in determining the state of biodiversity in South Africa and the true impacts of development.

#### **4.1.3 Better relationships**

A formal biodiversity offsets regime could encourage better relationships between the public and private sectors. Improved and cooperative relationships between the public and private sector and the incorporation of the concept of 'biodiversity mainstreaming' in business and public sector decision-making is also a potential benefit.

The potential benefits of biodiversity offsetting to conservation, business, communities and the State are addressed below.

#### **4.1.4 Benefits to conservation**

There are obvious benefits to conservation if biodiversity offsetting is utilised correctly. Such benefits often take the form of either averting

environmental loss (for instance by preventing development) or enhancing biodiversity through restoration or rehabilitation.<sup>186</sup> It should be held in mind that all measures to avoid and minimise environmental damage should be taken prior to an offset, and that any conservation which results from an offset is not seen as an extra benefit but a necessary and required compensation for the unavoidable harm that is done.

In circumstances where degraded ecosystems are restored, or vulnerable areas of biodiversity are given formal protection, the benefits to conservation are apparent (provided what was destroyed by the development was of 'less' conservation value).

Ten Kate et al suggest that more conservation will result in countries with offsetting regimes.<sup>187</sup> The IUCN report provides some statistics on the large amount of land contained in 'conservation banks' in the US, which would have otherwise been developed, were it not for the compulsory offsetting regime.<sup>188</sup> Such statistics can be misleading however, as the authors are careful to point out that in some cases it is doubtful that some developments which contributed to the banked land should have been authorised at all.<sup>189</sup> There are also information gaps as to what exactly biodiversity was lost to development and what was gained by offsetting.

In order to argue that 'more' conservation would occur in jurisdictions with biodiversity offsetting regimes one should consider the alternative systems. In South Africa, conservation is mostly the responsibility of the government who hold the environment in trust for the public.<sup>190</sup> Under the current legislative regime conservation efforts are achieved through a variety of mechanisms. The most protection is afforded to formally declared Protected Areas where limited human disturbance is permitted,

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<sup>186</sup> Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies* *Biological Conservation* (2012) 142.

<sup>187</sup> Ten Kate et al *Biodiversity Offsets* 14.

<sup>188</sup> Ten Kate et al *Biodiversity Offsets* 14.

<sup>189</sup> Ten Kate et al *Biodiversity Offsets* 15.

<sup>190</sup> NEMA section 2(4)(o) provides that "the environment is held in the public trust for the people."

but there are many other types of protected areas where some development is allowed.<sup>191</sup> Conservation efforts are also made through land use planning decisions where local authorities are able to authorise particular projects based on social and environmental considerations (amongst others). While there are instances of privately owned conservation areas (such as game reserves or wilderness areas) it is largely government resources, which are responsible for protecting biodiversity in South Africa.

While South Africa is known for its National Parks, coastlines and beautiful natural environment, it is arguable that the environmental law regime does not adequately provide for enough conservation.<sup>192</sup> Despite a well-developed Environmental Impact Assessment regime, most of the country's ecosystems are under threat and an increasing number of species are becoming threatened and endangered.<sup>193</sup> While there is significant non-compliance with environmental laws, much of the pollution and environmental degradation faced by biodiversity in South Africa is in fact legal- sanctioned by environmental and other authorities.<sup>194</sup> While efforts by authorities are made to reduce adverse environmental impacts, there is not enough motivation from an economic or social perspective for the state to prioritise the environment and increase the rate of conservation under our current legislative regime. While there are many conservation efforts being made by civil society and the private sector, because it is the state that chooses which developments to authorise, it is the state that is primarily responsible for preserving biodiversity in South Africa.

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<sup>191</sup> See section 9 of NEMPAA which provides for a variety of recognised protected areas. Management Plans for each declared protected area will provide for what activities are permitted in each protected area.

<sup>192</sup> Glazewski & du Toit describe South Africa's biodiversity as one of the world's most threatened at 13.1.1 page 13-3.

<sup>193</sup> See the National list of ecosystems that are threatened and in need of protection (GN 1002 of 9 December 2011 in GG No. 34809).

<sup>194</sup> For instance the air emissions permitted in terms of the NEMAQA or mining activities authorised by authorities.

Biodiversity offsetting would fill a new role in conservation efforts. Because the state bears the responsibility of formally declaring and managing land as a protected area in terms of legislation<sup>195</sup> an offset would typically result in an enforceable condition between the private party and the responsible authority.

#### **4.1.5 Benefits to business**

While the primary motivation for a business entering into a biodiversity offset agreement would be to satisfy requirements for an authorisation or licence to develop land or conduct a business activity that has environmental impacts,<sup>196</sup> there are other reasons why offsets may be beneficial to business. Biodiversity offsets could be described as a sort of social contract where some sacrifice is made by developers in realising a functional environment results in a better life for society.<sup>197</sup> Over 14 countries have laws requiring offsets in certain circumstances, and therefore the primary driver for the growing popularity of biodiversity offsets is thus to comply with these laws,<sup>198</sup> but there are many other reasons why the private sector is expressing growing interest in offsetting. These are considered below.

#### **4.1.6 Reputational benefits**

Ten Kate et al suggest that “regulatory goodwill and the company’s reputation” may be enhanced by businesses concluding biodiversity offsets.<sup>199</sup> By undertaking conservation measures, a company is able to demonstrate to both authorities and civil society that they can be trusted to give environmental concerns due weight. For authorities, this in turn may mean that future permits or licences are awarded to the company as a relationship has been established where good practice and compliance

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<sup>195</sup> Such as the National Environment Management: Protected Areas Act.

<sup>196</sup> IUCN *Independent report on biodiversity offsets* 15.

<sup>197</sup> Ten Kate et al *Biodiversity Offsets* 10.

<sup>198</sup> IUCN *Independent report on biodiversity offsets* 13.

<sup>199</sup> Ten Kate et al *Biodiversity Offsets* 39.

with above the bare minimum requirements has been shown.<sup>200</sup> Companies are becoming aware that social acceptancy is an essential component of trading in today's climate, and biodiversity offsets can be used as a mechanism to bolster their reputation in this regard.<sup>201</sup> The concept of an offset also recognises changing mind-sets of consumers, investors and companies themselves in appreciating a desire to be (and to be seen to be) aware of the negative effects of their operations on the environment, and to be doing something about it.<sup>202</sup>

#### **4.1.7 Accessing Finance**

In line with changing views of consumers and credit providers regarding social and environmental impacts of projects, companies with sound environmental track records may be able to access finance more easily.<sup>203</sup> The successful implementation of a biodiversity offset could improve both the social and environmental reputation of a company and help align it with the sustainable development requirements of many major development financiers (such as the World Bank, the International Finance Corporation (IFC) and the Asian Development Bank).

The Equator Principles are voluntary standards that many financial institutions have adopted and which require adherence to the mitigation hierarchy for projects that require financing over \$10 million.<sup>204</sup> These voluntary Principles call for environmentally and socially responsible development and require sound management practices in assessing risk associated with large development projects.<sup>205</sup> The Equator principles were based on the IFC Performance Standards. Biodiversity Offsetting is explicitly recognised in the IFC Performance Standard 6, and this has had the effect of promoting biodiversity offsetting even within industry which

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<sup>200</sup> Ten Kate et al *Biodiversity Offsets* 39.

<sup>201</sup> Doswald et al *Biodiversity Offsets* 5.

<sup>202</sup> Ten Kate et al *Biodiversity Offsets* 45.

<sup>203</sup> Ten Kate et al *Biodiversity Offsets* 40; Doswald et al *Biodiversity Offsets* 12.

<sup>204</sup> Doswald et al *Biodiversity Offsets* 10.

<sup>205</sup> Doswald et al *Biodiversity Offsets* 10.

does not typically require financing from such institutions.<sup>206</sup> Projects applying for finance from financial institutions that have adopted the IFC Principles or the Equator Principles will have to demonstrate adherence to the sustainable development and environmental safeguarding provisions required by the Principles.<sup>207</sup>

#### **4.1.8 Cost implications**

The cost of compliance with environmental laws can be extremely high for businesses in South Africa. A carefully designed biodiversity offset may result in lowering the cost of such compliance.<sup>208</sup> It may for example be cheaper (and have longer-lasting effect) for a company to implement an offset where a third party is responsible for the required conservation measures rather than the company itself attempting to achieve the biodiversity outcomes required. Businesses will rarely be well placed to make decisions relating to biodiversity and conservation and it would likely be better to have specialists in charge of implementing such an offset agreement. This type of arrangement (similar to the wetland banking) requires well-established offset regulation allowing businesses to pay 3<sup>rd</sup> parties to implement their conservation agreements. Companies designed to implement wetland, species or ecosystem conservation offsets are another spin off from a regulated biodiversity offset regime.

A further benefit of the regime, which Ten Kate et al elaborate on, is that undeveloped, conservation-worthy land becomes more valuable.<sup>209</sup> An example of this would be where a mining company is required to formally protect a particular species or ecosystem as part of an offset, a piece of land owned by a third party containing the species or ecosystem could be purchased in order to create the protected area and would be of higher value than had the offset not been required. This could also provide an

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<sup>206</sup> See IUCN *Independent report on biodiversity offsets* 13 for additional reasons.

<sup>207</sup> Doswald et al *Biodiversity Offsets* 10.

<sup>208</sup> Ten Kate et al *Biodiversity Offsets* 42.

<sup>209</sup> Ten Kate et al *Biodiversity Offsets* 20.

incentive not to develop land with high conservation value. Businesses and parastatals that own much land in South Africa, such as Transnet, could also find that properties they had previously considered of little significance could become worth much more than anticipated.

In more affluent jurisdictions, there is a growing trend for consumers to prefer buying from businesses who are environmentally friendly. As a result, companies are showing a greater desire to be seen to be doing something positive to compensate for the environmental harm their activities cause. There is evidence that biodiversity offsets can provide 'pride, satisfaction and allegiance' to employees within a company,<sup>210</sup> while attracting environmentally conscious consumers.

#### **4.1.9 Benefits to communities**

The concept of offsetting is sufficiently wide to include considerations relating to rural people who are affected by a proposed development. While ensuring no net loss of biodiversity, an offset may be designed to leave traditional communities or rural people who would be impacted by the project better off as a result of the development. Commentators on offsets suggest that rural peoples' reliance on biodiversity for food, medicine or shelter is necessary to assess when a development would impact those resource.<sup>211</sup> A successful biodiversity offset would ensure that (at least) the affected biodiversity is still able to support the community's needs, or that alternative arrangements are made to support such functions.

Five of BBOP's ten biodiversity offset principles relate to meaningfully involving communities in the design, implementation and enforcement of an offset. The cultural values of a community are to be considered as part of the 'landscape context' approach to offsetting which seeks to take into

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<sup>210</sup> Ten Kate et al *Biodiversity Offsets* 45.

<sup>211</sup> Ten Kate *Can biodiversity offsets help the rural population* 27.

account all factors impacting on an offset or the land to be developed.<sup>212</sup> Stakeholder participation in all decisions relating to an offset is also a vital component of ensuring community support for a project.<sup>213</sup> Only offsets which share the benefits and risks of a project fairly between stakeholders should be implemented.<sup>214</sup> BBOP recommends customary rights should be respected and that special emphasis should be placed on the rights of indigenous peoples and affected communities.<sup>215</sup> This should be done by way of a thorough and transparent public participation process which takes into account traditional knowledge of the affected area.<sup>216</sup>

While an individual offset may aid a community in a particular manner, a deeper benefit which could result from offsetting is that rural people are brought within the sphere of regulation and involved in decision-making which affects their lives and livelihoods.<sup>217</sup> Public participation is central in South Africa's Constitutional democracy, and equally important in environmental decision-making. NEMA's guiding principles provide that "environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option."<sup>218</sup> Another related NEMA principle requires that "environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons."<sup>219</sup>

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<sup>212</sup> BBOP *Standard on Biodiversity Offsets* 18.

<sup>213</sup> BBOP *Standard on Biodiversity Offsets* 20.

<sup>214</sup> BBOP *Standard on Biodiversity Offsets* 21.

<sup>215</sup> BBOP *Standard on Biodiversity Offsets* 21.

<sup>216</sup> BBOP *Standard on Biodiversity Offsets* 22.

<sup>217</sup> Ten Kate *Can biodiversity offsets help the rural population* 27.

<sup>218</sup> NEMA Section 2 (4)(b).

<sup>219</sup> NEMA section 2(4)(c).

Involving rural communities in land use and environmental decision making fosters a relationship of trust between government, business and the people and can facilitate a useful exchange of information and education. A biodiversity offset where a local community is empowered to be the management authority for a newly created protected area could result in both conservation outcomes and employment opportunities for rural people if correctly designed and implemented. This has significant benefit for all parties involved- the state, business, the communities and biodiversity. Of course, such an offset would be a feat to design and implement successfully, but still a hugely worthwhile goal to aim towards.

#### **4.1.10 Benefits for authorities**

Benefits to conservation, business and communities have been addressed, but a mandatory biodiversity offset scheme may additionally assist public authorities in realising their duties.

In a biologically diverse, developing country such as South Africa, the state has limited resources to protect, conserve and manage biodiversity. The enforcement of legislation aimed at preventing unlawful environmental destruction is also a significant challenge. But as with other resource intensive obligations (such as the provision of housing), the State as trustee of the environment has a duty to protect the environment, promote conservation and secure sustainable use of natural resources.<sup>220</sup> The State is also responsible for ensuring sustainable development.<sup>221</sup> The State holds the precarious position of being responsible for both development and conservation, and supporters of offsetting believe that such offsets represent a pragmatic and practical balance between these duties.

Biodiversity offsetting could be a method by which some of the burden of conservation is placed on the private sector and allows the state to

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<sup>220</sup> Section 24 of the Constitution of the Republic of South Africa, 1996.

<sup>221</sup> Section 24(b)(iii) of the Constitution of the Republic of South Africa, 1996.

authorise sustainable development in terms of its mandate. This benefit to environmental authorities is recognised in the National Biodiversity Framework where offsetting is described as being able to “provide significant benefits at little cost to the fiscus.”<sup>222</sup> As a developer, the state is also able to demonstrate its commitment to conservation through the use of offsets, where appropriate.

#### **4.1.11 Legal certainty and clarity**

In order to avoid unnecessary litigation, clarity should be provided in national legislation and policy. A state regulated biodiversity offset regime would provide legal certainty on the rights and duties of private and public authorities involved in the offset and provide consequences for default should the biodiversity agreement fail. A dedicated biodiversity offset regime would also be able to address the design elements and fundamental issues addressed in Chapter 2 above to provide certainty and clarity with regards the content of a particular offset.

There are detrimental effects of an ad hoc system to all parties involved.<sup>223</sup> A formalised system could provide norms and standards for minimum content and enforceability of offset agreements, as well as ensuring that best practice is followed.<sup>224</sup> A National regime would also provide a predictable legal environment where developers and authorities can manage their expectations and activities prospectively. Because of the need for flexibility in the design for biodiversity offsets, many commentators have praised a principles-based approach to the framework that would formalise and regulate the design, implementation and enforcement of biodiversity offsets in South Africa.

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<sup>222</sup> National Biodiversity Framework in GN 813 of 3 August 2009 in GG No. 32474.

<sup>223</sup> These could for instance include expensive and time-consuming legal challenges or delays to development.

<sup>224</sup> For a useful example of a conceptual framework diagram of the objectives, legal framework, appropriate conditions for an offset, design, implementation and outcome of a successful biodiversity offset see Gardner et al 2013 (3) *Conservation Biology Journal*.

## 4.2 ARGUMENTS AGAINST OFFSETTING

Commentators have described biodiversity offsetting as contentious because of the intrinsic acceptance of ecological losses being exchanged for uncertain gains.<sup>225</sup> This means that while there is guaranteed ecological loss from a particular development, it is not possible to guarantee appropriate, comparable and long-term ecological or conservation gains due to the many unknown variables and challenges involved in biodiversity offsetting.

Conceptually, the main argument against offsetting is that offsets will be seen as a licence for developers to simply pay money for any amount of environmental destruction. The fear is that developers would be able to simply buy the right to destroy nature for the right price. There are also significant practical challenges to offsetting which make many of its goals unachievable and unrealistic.

Criticisms of biodiversity offsetting can be divided into two groups - those opposed to the very concept, and those concerned with the implementation and challenges involved in offsetting on a practical level. Even the world's most established biodiversity offset collaboration of individuals, BBOP, agrees that biodiversity offsetting can do more harm to biodiversity, communities and to companies if used inappropriately and without regard to the mitigation hierarchy.<sup>226</sup>

### 4.2.1 Opposition in principle

On a fundamental level, critics of biodiversity offsetting oppose the idea that environmental degradation can be bought through offsetting. To such opponents, it is dangerous to encourage a mind-set that allows and authorises business to continue to destroy biodiversity *legally* by paying for compensation or mitigation measures elsewhere. This creates an

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<sup>225</sup> Bull et al 2013 *Fauna & Flora International* 1.

<sup>226</sup> BBOP *To No Net Loss and Beyond* 3.

unsustainable ethos in the minds of developers, society and authorities.<sup>227</sup> South African courts have held that developers should not be able to “buy” environmental authorisation by “undertaking to make some payment to a worthy socio-economic cause.”<sup>228</sup> Buying the right to destroy biodiversity could be thought of as legalising a form of bribery where authorities have some benefit accrued to them in exchange for authorising environmental damage.

Critics of the concept of biodiversity offsetting object to the commercialisation and commoditisation of the environment and the transactional nature of an offset.<sup>229</sup> In the same way that slaves were once thought of as tradable property or commodities, biodiversity and the life-supporting functions of ecosystems which benefit not only humanity should be not be the subject of a ‘licence to trash.’<sup>230</sup>

While it is an over simplification, to critics of offsetting, the idea that one aspect of biodiversity can be traded for another (‘zebras for buffalo’) is untenable. The idea that the destruction of an ecosystem or habitat can be legally ‘compensated’ by actions unrelated to the plants and animals affected by the development shows a lack of appreciation of the interconnectedness of ecosystems and their inherent right to exist.<sup>231</sup> There are also legitimate concerns that commodification of nature has led to the destruction of the natural environment, and biodiversity offsets will only further commodify nature and lead to greater environmental destruction.

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<sup>227</sup> Doswald et al *Biodiversity Offsets* 12.

<sup>228</sup> *Hangklip/Kleinmond Federation of Ratepayers Associations v Minister for Environmental Planning & Economic Development, Western Cape & Others* (2009) JOL 24371 (WCC) [70].

<sup>229</sup> See for instance the Letter from Action Nature et Territoire, France, to the Commissioner for the Environment, European Commission, dated 17 October 2014.

<sup>230</sup> Doswald et al *Biodiversity Offsets* 12; Letter from Action Nature et Territoire, France, to the Commissioner for the Environment, European Commission.

<sup>231</sup> Article 2 of The Universal Declaration of the Rights of Mother Earth provides that nature has the right to exist, regenerate, and maintain its identity and integrity.

Related to this criticism is the idea of attaching conservation values to aspects of biodiversity, and valuing certain species over others. This is an ultimately anthropocentric approach to nature and the earth. To value one ecosystem or species based solely on its utility to humankind does not recognise that biodiversity has intrinsic value independent of humans. Complex matrices have been developed to determine the financial value of conservation-worthy land, but there will rarely be consensus between society, scientists, conservationists, developers, lawyers and traditional communities regarding the 'true' value of a piece of property. While the extinction of a species should never be the subject of a biodiversity offset, the proximity of a species to endangered or threatened status as a result of a development is also contested.

#### **4.2.2 Opposition in practice**

While commentators may agree in principle with biodiversity offsetting, there are significant challenges involved in their design, implementation and enforcement which are exacerbated in a developing country. These are issues which parties involved in biodiversity offsetting, who believe that the idea is conceptually sound, will have to grapple with.

Practical issues relate to the achievability of the principles and goals of biodiversity offsetting. Concerns include the longevity of an offset, the compliance and enforcement mechanisms in the event of a breach of the agreement, and scientific uncertainty.

##### **4.2.2.1 Scientific Uncertainty**

There is much scientific uncertainty regarding the status of ecosystems, habitat or species and the long terms or cumulative effect of development or pollution of the environment.<sup>232</sup> Such uncertainty could relate to the fact that a particular area on which development is proposed has not been fully studied or the full effects of a proposed development are

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<sup>232</sup> Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies* *Biological Conservation* (2012) 145.

unquantified, underestimated or a change of circumstances occurs. Measuring impacts on biodiversity requires a multiskilled group of specialists with large cost and capacity implications.

#### 4.2.2.2 Parties

There are also issues regarding the independence of specialists in the offset arena in the same way environmental assessment practitioners require independence. There are problematic questions as to who is best placed to administer the offset - whether the private or public sector has the capacity, skills and authority.

#### 4.2.2.3 Content

Should offsetting become a mandatory procedure, there is also the very real challenge of what content to give to a biodiversity offset and who the parties are who get to decide the content of such an offset.

A major issue involved in the design of an offset is the high degree of scientific uncertainty involved in biodiversity in South Africa. There are many species and ecosystems which have not been studied sufficiently to be able to make decisions regarding the conservation 'value' or effect on the broader South African environment. This means that it is impossible to determine the content of an offset would result in 'no net loss.'

It is also difficult to decide on thresholds for when an offset is appropriate.<sup>233</sup> This refers to the circumstances where development which has negative environmental impacts should be permitted subject to the conclusion of a biodiversity agreement.

South Africa as a developing country contains additional practical challenges for the design, implementation and enforcement of offsets. Limited money to spend on these, a fragmented land use planning and

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<sup>233</sup> Doswald et al *Biodiversity Offsets* 13, Maron M et al *Faustian bargains? Restoration realities in the context of biodiversity offset policies* *Biological Conservation* (2012) 144.

environmental regime between many authorities all contribute to making the implementation and enforcement extremely challenging.

Critics fear that biodiversity offsetting will be used as a superficially environmentally friendly face to cover up behind-the-scenes environmental damage and that it will amount to 'greenwashing.'<sup>234</sup>

#### 4.2.2.4 Enforcement

Enforcement of environmental laws is an ongoing challenge around the world and particularly in South Africa where resources are predominantly directed to combating violent crime rather than pollution or environmental degradation.

The fear with lack of enforcement (or threat of enforcement) is that development will be authorised subject to an offset condition. Development will commence with the associated negative environment impact but there will be no incentive for the developer to implement the offset as there is no provision for sanction or penalties.

#### 4.2.3 Potential disadvantages for business

There are associated drawbacks for businesses involved in the establishment of biodiversity offset conditions. The worst risk for all parties is that the offset may fail to materialise the conservation outcomes that it was designed to.<sup>235</sup> On top of failing to mitigate environmental damage, an unsuccessful offset may harm a company's reputation for both consumers and regulators.

Ten Kate et al describe consumer scepticism at the true motivation for business or government's imposition of offsets and whether it amounts to 'greenwashing' while simply allowing destructive development to

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<sup>234</sup> Letter from Action Nature et Territoire, France, to the Commissioner for the Environment, European Commission.

<sup>235</sup> Ten Kate et al *Biodiversity Offsets* 48.

continue.<sup>236</sup> A remedy for such distrust from civil society would be open and accountable governance and public participation where sufficient information is available for critics to (hopefully) see the benefits to conservation achieved by the offset.<sup>237</sup>

While business may not enjoy the additional scrutiny or attention which an offset agreement may attract from consumers, this may have positive implications for society. Increased scrutiny could pose a barrier to the conclusion of a voluntary offset agreement<sup>238</sup> but it could also ensure better design and implementation for fear of the negative effects of a failed project.

Many companies have indicated that the risk of attracting additional unforeseen legal liability and further responsibilities as a result of the offset is a significant consideration when deciding whether to conclude such a voluntary offset agreement.<sup>239</sup>

### **4.3 CURRENT BIODIVERSITY OFFSETS PROPOSALS IN SOUTH AFRICA**

SANBI indicates that in 2013, over 20 biodiversity offsets had been formally approved in South Africa.<sup>240</sup> These were concluded as a condition of an environmental (or other) authorisation. While such agreements have been 'approved,' no biodiversity offset has been 'fully secured' yet, meaning that the implementation of the offsets is still in preliminary stage.<sup>241</sup>

Certain geographical areas in South Africa with economic importance, such as the Richard's Bay Port Expansion Area and Industrial Development Zone have shown special interest in attaching offset

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<sup>236</sup> Ten Kate et al *Biodiversity Offsets* 45.

<sup>237</sup> Ten Kate et al *Biodiversity Offsets* 46.

<sup>238</sup> Ten Kate et al *Biodiversity Offsets* 46.

<sup>239</sup> Ten Kate et al *Biodiversity Offsets* 49.

<sup>240</sup> Manuel *Overview of the South African framework for Biodiversity Offsets* 16.

<sup>241</sup> Manuel *Overview of the South African framework for Biodiversity Offsets* 16.

agreements to authorisations, with more than five EIA decisions incorporating them.<sup>242</sup>

#### **4.3.1 Mapungubwe World Heritage Site Biodiversity Offset**

The mining company, Coal of Africa, proposed a series of biodiversity and other ‘offsets’ in mitigation for its coal mining operations at its Vele Colliery near the Mapungubwe World Heritage site in Mpumalanga. The signing a Memorandum of Understanding and a ‘biodiversity offset agreement’ with the Department of Environmental Affairs was concluded in October 2014.<sup>243</sup> Cultural heritage, tourism development and water resource management efforts were required in addition to conservation actions to compensate biodiversity loss from the coal mining operations.<sup>244</sup> The mine has been criticised for its lack of compliance with environmental laws in recent years, making environmentalists sceptical of the success of the offset programme.

Prior to the signing of the offset, objectors to the proposed biodiversity offset in the Mapungubwe matter criticised its vague and inadequate goals.<sup>245</sup> Such objections illuminate recurrent problems which conservationists have with offsetting. The Endangered Wildlife Trust expressed its displeasure in the following strong terms in its application to interdict Coal of Africa in its mining operations following continued breaches of environmental laws:

“The only mitigation evident for biodiversity impacts are offsets and relocations/rescues. This is totally inadequate for biodiversity, with the possible exception of certain plants. Many species cannot be relocated, in particular birds and other mobile species. This mitigation seems to come purely from a botanist’s narrow viewpoint. Mention is made of biodiversity

<sup>242</sup> *Richard’s Bay EMF Best Practice Guidance 1.*

<sup>243</sup> See DEA media statement of 08/10/2014 “*Historic Biodiversity Offset Agreement signed by DEA, SANPARKS and Coal of Africa for Vele Colliery.*”

<sup>244</sup> See “Vele coal project moves closer to finalisation” Mining Review 05.09.2011

<sup>245</sup> See Part 7 of the Interdict Application.

offset projects being investigated further once the project is underway. This is meaningless and should not be used/cited as a mitigation measure unless a firm commitment is made to implement these with a full description of the offset in every aspect. This commitment is not evident, only vague promises. A biodiversity offset approach is also totally inappropriate to compensate for impacting on an area which clearly has a strong 'sense of place'<sup>246</sup>

The offset was included in an environmental authorisation which the Vele Colliery required because it had previously unlawfully commenced with activities listed in the 2010 EIA Regulations. The offset requires Coal of Africa to pay R55million to SANPARKS payable in five phases over 25 years.

The Mapungubwe 'offset' is extremely problematic for numerous reasons. In terms of BBOP's defining characteristics of a biodiversity offset, the Agreement between the parties would not qualify as a biodiversity offset on several fronts. The minimum requirement of No Net Loss of biodiversity is not met, and the actions for which the money was paid do not seem to relate to biodiversity at all but social upliftment.<sup>247</sup> The Centre for Environmental Rights (CER) criticises the offset for failing to have involved interested and affected parties in its design and failing to increase any protected areas for conservation.<sup>248</sup> Furthermore, the offset presents a dangerous precedent to future offsets imposed as mandatory conditions in authorisations for its lack of clarity, transparency and

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<sup>246</sup> Endangered Wildlife Trust comments, 27 July 2009, page 415.

<sup>247</sup> See the DEA's media statement of 08.09.2014 where the payment is lauded for the jobs and education facilities it will bring about, while there is no mention of any environmental mitigation measures for the 8663 hectares of land within the buffer zone of a World Heritage Site and previously earmarked for conservation which will be mined for coal.

<sup>248</sup> See CER Media Release, of 30 October 2014: *Save Mapungubwe Coalition calls the biodiversity offset agreement for Vele colliery "vague, inadequate and unenforceable."*

enforceability. With regards the latter, the CER expressed concerns over how the payment can be enforced.<sup>249</sup>

When examined in light of the definition of a biodiversity offset provided by BBOP and the principles involved in the design and implementation, the Mapungubwe offset fails at almost every level. The payment of a relatively insignificant amount of money to SANPARKS as a condition to an authorisation for the unlawful commencement of listed activities would seem to exemplify the concerns that offsetting could become ‘legalised bribery’ and a ‘licence to trash.’

#### **4.3.2 Wild Coast Toll Road**

A biodiversity offset has been proposed by the South African National Roads Agency Limited (SANRAL) to compensate for cultural and environmental damage that a proposed toll road traversing the Wild Coast in KwaZulu Natal and the Eastern Cape would have. The content of any agreement has yet to be determined, but SANRAL has indicated that the offset would be in relation to the establishment of a Wild Coast National Park.

There has been vociferous opposition to the proposed toll road through the Wild Coast, and many objections to the proposed biodiversity offset. Some of the reasons for objecting relate to the area affected by the proposed road being a “recognised centre of plant diversity and endemism” as well as an area rich in traditional indigenous culture which would be threatened by such development.<sup>250</sup> The common thread of a lack of knowledge regarding the biodiversity of the area and the unquantified effects of construction on unstudied species was also a prominent reason against the conclusion of such an agreement.<sup>251</sup>

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<sup>249</sup>See CER Media Release, 30 October 2014: *Save Mapungubwe Coalition calls the biodiversity offset agreement for Vele colliery “vague, inadequate and unenforceable.”*

<sup>250</sup> Proposed N2 Wildcoast Toll Highway page 22.

<sup>251</sup> Proposed N2 Wildcoast Toll Highway page 22.

The Eastern Cape Provincial Department of Economic Development Environmental Affairs and Tourism (DEDEAT) has indicated that the proposed Wild Coast biodiversity offset is of “crucial strategic importance.”<sup>252</sup> DEDEAT recognises the significance of the potential negative effects of the proposed road and the extent of uncertainties regarding indirect and cumulative impacts of the proposed toll road and has indicated that it requires more information from various parties prior to any construction.<sup>253</sup> The Department has recommended that the type, cost and content of the offset be determined and agreed upon and such agreement signed by all parties prior to construction. It has requested recommendations from specialists (including legal advisors) regarding the impacts and legal status of the offset to be submitted prior to the commencement of any construction.<sup>254</sup>

The public parties involved in the negotiation of this biodiversity offset include the National and Provincial Departments of Environmental Affairs, the National Department of Forestry Affairs, the Eastern Cape Parks Board and the Working for Water initiative in addition to SANRAL and (hopefully) the affected traditional communities. While it remains for the content of the offset to be determined, the fact that threatened and endangered species within critical biodiversity areas would point to an offset being inappropriate in terms of the limits of what should be able to be offset.

Various other mining operations in South Africa have considered offsetting but few have been implemented or publicly documented.<sup>255</sup>

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<sup>252</sup>Draft Spatial and Environmental Guidelines for the Wild Coast 63.

<sup>253</sup> Draft Spatial and Environmental Guidelines for the Wild Coast 63.

<sup>254</sup>Draft Spatial and Environmental Guidelines for the Wild Coast 63.

<sup>255</sup> See for example Botha *Draft Scope Gamsberg Biodiversity Offset Report* where a biodiversity offset has been proposed for zinc mining activities in the Northern Cape Province.

#### **4.4 BIODIVERSITY OFFSETS IN SOUTH AFRICA**

From a conceptual viewpoint, offsetting in South Africa is very different to some jurisdictions which have established regimes. South Africa has pristine, wild areas with rich biodiversity, unlike much of Europe and America which has been developed and settled for centuries. This means that South Africa has a lot more to lose should an offset fail to achieve its no net loss objectives. The restoration of degraded wetlands or creation of protected environments from previously disturbed land as an offset in England cannot be equated to the same in mitigation for the destruction of pristine land in South Africa.

South Africa also has rich mineral deposits which form the backbone of the economy and is a developing nation and a new democracy in comparison to European and American counterparts. What is appropriate in other countries must be carefully considered in South Africa to see whether benefits exceed potential harm caused by offsetting in our unique setting. South Africa also has vast agricultural lands that provide food security to the country and improve its export economy. Mining and agriculture put huge pressure on biodiversity in South Africa.

There has been tension between mining and environmental authorities regarding which body has final say over the environmental impacts of mining with this duty originally lying with the DEA before being partially transferred to the Department for Minerals Resources (DMR) through recent legislative amendments. This has been contentious due to the fact that the DMR's mandate is to enable mining and the Department may not have the environmental expertise required to assess environmental impacts and only authorise those which are justifiable.

Taking these factors into consideration, it is submitted that there are potentially significant benefits to a formalised biodiversity offsetting regime in South Africa. Such a regime would have to ensure that no net loss (at a

minimum) and the foundational principles addressed in Chapter 2 are strictly adhered to.

#### **4.5 SUMMARY OF PROS AND CONS**

It is submitted that the pros of a dedicated biodiversity offsetting regime outweigh the cons of such a regime provided that strict limits are placed on the circumstances when biodiversity offsets are permissible. The examples described above show the failures of an ad hoc system to give effect to the fundamental requirements of biodiversity offsetting such as prior application of the mitigation hierarchy and the requirement of no net loss. Many such design elements could be remedied in a dedicated biodiversity offset regime.

## **Chapter 5: Towards an effective legal framework in South Africa**

In drawing together the elements discussed above it has been demonstrated that biodiversity offsetting is compatible with the current legislative scheme in South Africa. After having analysed the pros and cons of offsetting and a dedicated offsetting regime, it has been submitted that a formal biodiversity offset regime is the preferable option to continuing with the current ad hoc status quo.

### **5.1 What is still required in South African legislation?**

Once this conclusion has been reached, design considerations necessary for a dedicated biodiversity offset regime need to be taken into account. These fall into two categories. Conceptual design elements such as which offsetting principles to entrench, and whether to require net gain or no net loss of biodiversity must be considered. Next, a regime must be compatible with requirements of the primary laws which regulate the environment as discussed in Chapter 3. Such compatibility should be both conceptual and procedural.

Finally, a regime should include design elements which seek to avoid some of the potential negative effects for instance through compliance and enforcement mechanisms and setting limits for offsetting.

As described above, efforts to regulate and formalise biodiversity offsetting in South Africa are being made at local and provincial levels. While a national policy framework has not yet been published, there is evidence that one is in the process of being currently developed.<sup>256</sup> Commentators have suggested that formalising both the theoretical and practical decision-making processes involved in the design,

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<sup>256</sup> A draft National Policy Framework for Biodiversity Offsetting was submitted to the Department of Environmental Affairs in 2011 but has not been approved as of 2014. The NBF 2009 required the publication of a national policy on biodiversity offsets by 2012 and it is therefore considerably overdue.

implementation and enforcement of biodiversity offsets is a positive move and one to be encouraged.<sup>257</sup>

South Africa has many legislative, policy and information tools which can aid decision-making involved in biodiversity offsetting. NEMBA provides for the drafting of the National Biodiversity Strategy and Action Plan and the National Spatial Biodiversity Assessment which are both incorporated in the National Biodiversity Framework. It also provides for bioregional plans and biodiversity management plans. The status of ecosystems in South Africa, the vulnerability or level of protection of species and ecosystems, socio-economic opportunities and constraints on biodiversity as well as threatened, endangered and priority species and ecosystems have been identified in terms of these documents. These statistics are valuable in determining many aspects of biodiversity offsetting such as limits to what is 'offsettable,' what should be prioritised and where offsets should be implemented geographically.

Another useful resource to regulating biodiversity is the National Biodiversity Framework (NBF), mandated under section 38 of NEMBA which provides guidance on co-ordinating and aligning the efforts of stakeholders involved in conserving and managing the country's biodiversity. Its aims include 'focussing attention on the most urgent strategies and actions required for conserving and managing South Africa's biodiversity' and highlighting the 'roles and responsibilities of key stakeholders, including key organs of state whose mandates impact directly on biodiversity conservation and management.'

The 2009 NBF included a section on 'Policy framework for biodiversity offsets' under the strategic objective 'Integrate biodiversity considerations in land-use planning and decision-making, by developing tools for supporting and streamlining environmental decision-making.'<sup>258</sup> The NBF

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<sup>257</sup> Gardner et al 2013 (2) *Conservation Biology Journal*.

<sup>258</sup> National Biodiversity Framework GN 813 in Government Gazette 32474 of 3 August 2009.

recognises that there is a role for biodiversity offsets in South Africa and that their implementation should be considered once the mitigation hierarchy has been applied. The NBF provides that “In some cases, following avoidance and mitigation, there is still residual damage to biodiversity as a result of a development. In such cases, if the development is socially and economically sustainable, ecological sustainability may be achieved through a biodiversity offset. A biodiversity offset involves setting aside land in the same or a similar ecosystem elsewhere, at the cost of the developer. Biodiversity offsets are particularly important in threatened ecosystems and critical biodiversity areas. They are already being implemented to some extent in South Africa, but in the absence of a legal or policy framework and thus with little consistency. Systematic application of biodiversity offsets could provide significant benefits at little cost to the fiscus.”

NEMA, the SEMAs, and other legislation which provides for the authorising of activities which have detrimental effects on the environment provide a sound and conceptually compatible basis for the introduction of biodiversity offsets.

## **5.2 Conclusion**

The increasing popularity of offsets internationally, and South Africa’s only recent efforts to utilise them mean that those involved in the framing of a national biodiversity offset framework or dedicated offset regime have a wealth of literature to guide them. While biodiversity offsets may have seemed a ‘magic bullet’ for enabling sustainable development when first suggested, the many problems discussed above highlight the very real challenges involved in the design, implementation and enforcement of biodiversity offsets. While international literature on biodiversity offsets is valuable in offering guidance, the unique political, social, environmental and economic pressures faced by South Africa must be considered.

Adapting biodiversity offsets to local circumstances is an important task and has been called for by many commentators.<sup>259</sup> Local relevancy and the consideration of regional ecological challenges as well as local scientific and indigenous knowledge is essential.<sup>260</sup>

In considering the three pillars of biodiversity offsetting (their design, implementation and enforcement)<sup>261</sup> the following factors should be taken into account when drafting legislation or policies. Biodiversity offsets are an addition to the environmental regulatory scheme. They should not be a replacement for any requirements already imposed on developers. The foundational NEMA principles should be given maximum effect when considering an offset, especially the precautionary approach<sup>262</sup> and the prior application of the mitigation hierarchy. It is crucial that an offset does not undermine the prior steps in mitigation hierarchy.<sup>263</sup> Offsets should provide tangible, effective biodiversity benefits and should not be symbolic or amount to greenwashing. In-Kind or 'Like for like' conservation actions should be prioritised. This would have more chance in resulting in no net loss of biodiversity.

Should a formalised biodiversity offset regime involve public entities (such as SANBI or Municipalities), the powers and functions of such bodies should clearly allow for their involvement. Public entities may only operate within their legislated mandate

South Africa's late entry into the offsetting economy provides it with the advantage of perspective over the shortcomings of more established regimes. The extensive body of critical literature, best practice guidelines, principles and frameworks on biodiversity offsetting is extremely valuable in adapting the concept to the South African context.

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<sup>259</sup> See for example Gardner et al 2013 (8) *Conservation Biology Journal*.

<sup>260</sup> See for example Gardner et al 2013 (8) *Conservation Biology Journal*.

<sup>261</sup> Ten Kate et al *Biodiversity Offsets* 15.

<sup>262</sup> The precautionary principle provides that the greater the risk or uncertainty of environmental harm, the greater the caution authorities and private persons should proceed with.

<sup>263</sup> Gardner et al 2013 (2) *Conservation Biology Journal*.

It submitted that some of the fears of detractors from the concept of offsetting would be allayed by uncompromising adherence to the mitigation hierarchy and other essential principles which have been considered above (such as no net loss or applying strict limits to what can be offset).

For biodiversity offsets to gain support they should be 'tangible, quantitative and enduring'<sup>264</sup> so as not to be seen as greenwashing or window dressing serious environmental damage hidden from the public eye.

It can be argued that while biodiversity offsetting may be flawed, it is the currently the best compromise between development and conservation. There are a limited number of options available to developers and regulators that facilitate sustainable development. It must also be remembered that biodiversity offsetting is still in its infancy and, through implementation, has room to improve through practice and application.

In conclusion it is submitted that a formal biodiversity offset regime would have a valuable role to play in South African environmental law. This role should be regulated by enabling legislation and policy- which should provide guidelines, minimum standards and content to biodiversity offset agreements. Biodiversity offsets are but one tool amongst many for authorities to facilitate sustainable development. It must be remembered that biodiversity offsets should never replace existing legal requirements and should exist within the regulative scheme already entrenched in South Africa. Certain areas, species or ecosystems based on vulnerability or other conditions should be wholly excluded from the ambit of offsetting (i.e. they should be off-limits to developers).

It has been demonstrated that conceptually, a biodiversity offset regime is compatible with South African environmental law, but the law as it stands

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<sup>264</sup> IUCN *Independent report on biodiversity offsets* 9.

does not adequately provide for the imposition of a biodiversity offset as a condition of authorisation. A formal legislative regime is preferable to the current ad hoc approach.

While this dissertation advocates the use of biodiversity offsets, this is only in particular, limited circumstances. There will frequently be circumstances where offsetting would not be appropriate and no development should be permitted whatever the price willing to be paid by the developer.

# BIBLIOGRAPHY

## Primary sources:

### Legislation

#### South Africa

Constitution of the Republic of South Africa, 1996.

Environmental Conservation Act 73 of 1989.

Minerals and Petroleum Resources Development Act 28 of 2002.

National Environmental Management Act 107 of 1998.

National Environmental Management: Biodiversity Act 10 of 2004.

National Environmental Management: Integrated Coastal Management Act 24 of 2008.

National Environmental Management: Protected Areas Act 57 of 2003.

National Heritage Resources Act 25 of 1999.

National Water Act 36 of 1998.

Promotion of Administration of Justice Act 3 of 2000.

#### International

United Nations Convention on Biological Diversity, June 5 1992, 31 ILM 818.

The Universal Declaration of the Rights of Mother Earth.

### Regulations

Environmental Impact Assessment Regulations, 2006 in GN R385 in Government Gazette 28753 of 21 April 2006.

Environmental Impact Assessment Regulations, 2010 in GN R543 in Government Gazette 33306 of 18 June 2010.

Environmental Impact Assessment Regulations, 2014 in GN R982 in Government Gazette 38282 of 4 December 2014.

Listing Notice 1 GNR 544 in Government Gazette 33306 of 18 June 2010.

Listing Notice 2 GNR 545 in Government Gazette 33306 of 18 June 2010.

Listing Notice 3 GNR 546 in Government Gazette 33306 of 18 June 2010.

Listing Notice 1 GNR 983 in Government Gazette 38382 of 4 December 2014.

Listing Notice 2 GNR 984 in Government Gazette 38382 of 4 December 2014.

Listing Notice 3 GNR 985 in Government Gazette 38382 of 4 December 2014.

### Notices

National Biodiversity Framework GN 813 in Government Gazette 32474 of 3 August 2009.

National list of ecosystems that are threatened and in need of protection GG No. 34809 in GN 1002 of 9 December 2011.

### Cases

*Fedsure Life Assurance Ltd v Greater Johannesburg Transitional Metropolitan Council* 1999 (1) SA 374 (CC).

*Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* 2007 (10) BCLR 1059 (CC).

*Hangklip/Kleinmond Federation of Ratepayers Associations v Minister for Environmental Planning & Economic Development, Western Cape & Others* (2009) JOL 24371 (WCC).

*Mapungunubwe Action Group and others v Limpopo Coal (PTY) Ltd and Others* South Gauteng High Court 02-08-2010 case no 10/30146

*SLC Property Group (Pty) Ltd & Another v Minister of Environmental Affairs & Economic Development* (2007) JOL 21007 (C).

## Secondary sources

### Literature:

#### Books

Cullinan C *Wild Law* (2011) Siber Ink Cape Town

Glazewski J & du Toit L (eds) *Environmental Law in South Africa* (2014) LexisNexis Butterworth Durban.

Kidd M *Environmental Law* (2011) Juta Cape Town.

Sands P *Principles of International Environmental Law* (2003) Cambridge, UK.

#### Journal Articles

Bull JW, Suttle KB, Gordon A, Navinder JS & Milner-Gulland EJ "Biodiversity offsets in theory and practice" 2013 *Fauna & Flora International, Oryx*, 0(0), 1–12

Coyne M "Wetlands: Bush Changes Administration Policy to 'Net Gain' of Resource" 2004 *Greenwire Natural Resources Vol. 10 No. 9 Environment and Energy Publishing LLC*.

Feris L "Constitutional Environmental Rights: An under-utilised Resource" 2008 *South African Journal of Human Rights* Vol 24 Issue 1.

Gardner T, Hase A, Brownlie S, Ekstrom J, Pilgrim J, Savy C, Steohens R, Treweek J, Ussher G, Ward, G & Ten Kate K "Biodiversity Offsets and the Challenge of Achieving No Net Loss" 2013 *Conservation Biology Journal* Vol 00 o 0, 1-11.

Gordon A, Langford WT, Todd JA, White MD & Mullerworth DW "Assessing the impacts of biodiversity offset policies" 2011 *Environmental Modeling and Software*, 144, 558-566.

Kiesecker JM, Copeland H, Pocewicz A, and McKenney B 2010. Development by design: blending landscape-level planning with the mitigation hierarchy. *Frontiers in Ecology and the Environment* 8: 261–266

Madsen B, Carrol N, Kandy D, Bennett G "State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide" 2011 *Forest Trends, Washington DC, USA*.

Maron M, Hobbs R, Moilanen A, Matthews J, Christie k, Gardner T, Keith D, Lindenmayer D & McAlpine *Faustian bargains? Restoration realities in the context of biodiversity offset policies* *Biological Conservation* 155 (2012) 141–148.

McKenney B & Kiesecker J "Policy Development for Biodiversity Offsets: A Review of Offset Frameworks" 2010 *Environmental Management* 45, 165-176.

McKenney B 2005 :Environmental Offset Policies, Principles and Methods: A Review of selected legislative frameworks.“ Amhurst (NH): Biodiversity Neutral Initiative.

Walker A, Brower L, Theo Stephens RT, & Lee WG 'Why bartering biodiversity fails' 2009 *Conservation Letters* 2, 149-157.

### **Business and Biodiversity Offsets Programme (BBOP):**

BBOP (2009) *Biodiversity Offset Design Handbook, Appendices*. Washington, D.C.available at [http://www.forest-trends.org/documents/files/doc\\_3126.pdf](http://www.forest-trends.org/documents/files/doc_3126.pdf) (accessed 15.02.2015)

BBOP (2009) *The Relationship between Biodiversity Offsets and Impact Assessment: A BBOP Resource Paper*. BBOP, Washington, D.C.available at [http://www.forest-trends.org/documents/files/doc\\_3087.pdf](http://www.forest-trends.org/documents/files/doc_3087.pdf) (accessed on 15.02.2015).

BBOP (2012) *Standard on Biodiversity Offsets. Washington, D.C. (2012)*. Available at <http://bbop.forest-trends.org/guidelines/Standard.pdf> (accessed on 15.02.2015).

BBOP (2012) *Resource Paper: Limits to What Can Be Offset* available at [http://bbop.forest-trends.org/guidelines/Resource\\_Paper\\_Limits.pdf](http://bbop.forest-trends.org/guidelines/Resource_Paper_Limits.pdf) (accessed on 02.08.2015).

BBOP (2013) *To No Net Loss and Beyond: An Overview of the Business and Biodiversity Offsets Programme* Washington, D.C available at [http://www.forest-trends.org/documents/files/doc\\_3319.pdf](http://www.forest-trends.org/documents/files/doc_3319.pdf) (accessed on 02.08.2015).

BBOP Mitigation Hierarchy available at [http://bbop.forest-trends.org/pages/mitigation\\_hierarchy](http://bbop.forest-trends.org/pages/mitigation_hierarchy) (accessed on 02.08.2014).

BBOP *Principles on Biodiversity Offsets* available at [http://bbop.forest-trends.org/documents/files/bbop\\_principles.pdf](http://bbop.forest-trends.org/documents/files/bbop_principles.pdf) (accessed 14.02.15).

Manuel J *Overview of the South African framework for Biodiversity Offsets*. BBOP Community of Practice. 22 May 2013 available at <http://bbop.forest-trends.org/documents/files/jmanuelppt.pdf> (accessed 16.02.15).

### **Reports**

Cyrus D P& Viviers L (2008) *Aquatic Ecosystem Gap Analysis and Preliminary Offset Assessment for Future Development of the Port of Richards Bay* (2008). Coastal Research Unit of KwaZulu-Natal, Investigational Report No. 126.

Department of Environment and Conservation (NSW, Australia) (2005) *BioBanking – a Biodiversity Offsets and Banking Scheme: conserving and restoring biodiversity in NSW. Working Paper*.

Doswald N, Barcellos Harris M, Jones M, Mulder I (2012) *Biodiversity Offsets: voluntary and compliance regimes. A review of existing schemes, initiatives and guidance for financial institutions*. UNEP-WCMC, Cambridge, UK. FI, Geneva, Switzerland.

Ten Kate K, Bishop J & Bayon R *Biodiversity offsets: Views, experience, and the business case*. (2004) IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment, London, UK.

## Other

Botha M, Driver M, Cullinan M, Helm N, de Villiers C, & Love V *Thinking about biodiversity* (2005) Unpublished Notes and Discussion from Botanical Society workshop on Biodiversity Offsets.

Elliott M, Cutts N, Cyrus D P, Thomson S M and Viviers L (2009) *Expansion of Richards Bay Harbour: Review of Ecosystem Loss and Offset Development Potential. A report prepared for Transnet National Port Authority, Richards Bay through Ilifa Engineers Pty (Ltd) for the Due Diligence Investigation for Future Port Development.* Institute of Estuarine and Coastal Studies Coastal Studies, University of Hull and the Research Unit of KwaZulu-Natal, Investigational Report No. 138, pages 62.

## Policy Documents

Department of Agriculture, Forests and Fisheries (Undated document) Principles and Guidelines for control of development affecting natural forests”

Department of Economic Development Environmental Affairs and Tourism, *Draft Spatial and Environmental Guidelines for the Wild Coast 2009*

Department of Environmental Affairs and Development Planning. (2011) Information Document on Biodiversity Offsets, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning, October 2011.

Department of Environmental Affairs and Development Planning. (2005) Guidelines on Resort Development in the Western Cape.

Department of Environmental Affairs and Development Planning. 2007. *Provincial Guideline on Biodiversity Offsets.* Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Department of Environmental Affairs, 2014, Environmental Impact Assessment and Management Strategy.

Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, South African Mining and Biodiversity Forum, and South African National Biodiversity Institute. 2013. *Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector.* Pretoria.

Department of Environmental Affairs. *National Strategy for Sustainable Development and Action Plan 2011-2014.*

Ezemvelo KZN Wildlife (2010) Concise Guideline for Biodiversity Offsets: KwaZulu-Natal Province. South Africa. Version 5, November 2010.

Ezemvelo KZN Wildlife. 2009. Norms and Standards for biodiversity offsets: KwaZulu-Natal province, South Africa. Final Draft Document, July 2010.

Macfarlane, D, Holness S, von Hase A, Brownlie, S. & Dini J, 2014. *Wetland offsets: a best-practice guideline for South Africa.* South African National Biodiversity Institute and the Department of Water Affairs. Pretoria.

SANBI (2012). Towards a best practice guideline for Wetland Offsets in South Africa. Beta version obtained from.

## Electronic

Addendum 4 to Environmental Management Framework for the Richard's Bay Port Expansion and Industrial Development Zone: Best Practice Guidance: Biodiversity Offsets  
[http://www.kzndae.gov.za/Portals/0/EMF\\_uMhlatuze%20EMF/Addendum%204\\_Biodiversity%20Offsets.pdf](http://www.kzndae.gov.za/Portals/0/EMF_uMhlatuze%20EMF/Addendum%204_Biodiversity%20Offsets.pdf)  
 (accessed on 21.06.14).

Brownlie S & Botha M (2009): *Biodiversity offsets: adding to the conservation estate, or 'no net loss?' Impact Assessment and Project Appraisal*, 27:3, 227-23.1 available  
<http://www.tandfonline.com/doi/pdf/10.3152/146155109X465968> (accessed 15.02.2015).

Centre for Environmental Rights Media Release 30 October 2014 "Save Mapungubwe Coalition calls the biodiversity offset agreement for Vele colliery- vague, inadequate and unenforceable" available at  
<http://cer.org.za/news/media-release-save-mapungubwe-coalition-calls-the-biodiversity-offset-agreement-for-vele-colliery-vague-inadequate-and-unenforceable> (accessed 14.12.2014).

Department of Environmental Affairs media release 8 October 2014 "Historic Biodiversity Offset signed by the Department of Environmental Affairs, SANPRKS and Coal of Africa for Vele Colliery." Available at  
<https://www.environment.gov.za/media/gallery/biodiversityoffsetagreement#1397> (accessed 16.12.14).

EcoWatch 140 Organisations call for End to Biodiversity Offsetting Plans, 2013  
<http://ecowatch.com/2013/11/22/international-organizations-end-biodiversity-offsetting/> accessed (21.06.14)

Endangered Wildlife Trust comments, 27 July 2009, page 415 avail at <http://cer.org.za/wp-content/uploads/2010/08/Interdict-applic-FA-part-7.pdf> (accessed 20.06.2014).

Glazewski J and du Toit (eds) *Environmental Law in South Africa*, LexisNexis, available at  
<http://www.mylexisnexis.co.za/Index.aspx> (accessed 16-02-15).

Harck T Are biodiversity offsets a licence to plunder natural resources? IAIA Newsletter, August 2005. Available at  
[http://www.iaia.co.za/File\\_Uploads/file/August05.pdf](http://www.iaia.co.za/File_Uploads/file/August05.pdf) (accessed 19.12.14).

ICMM IUCN (2012) independent report on biodiversity offsets. Prepared by The Biodiversity Consultancy. Available at [www.icmm.com/biodiversity-offsets](http://www.icmm.com/biodiversity-offsets) (accessed 16.12.14).

Letter from Action Nature et Territoire, France, to the Commissioner for the Environment, European Commission, dated 17 October 2014 available at <http://www.fern.org/publications/ngo-statements/open-letter-commissioner-poto%C4%8Dnik-about-biodiversity-offsetting> (accessed 15.02.15)

Mining Review article 5 September 20100 available at <http://www.miningreview.com/vele-coal-project-moves-closer-to-finalisation/> (accessed 19.12.14).

Mowat, H *Biodiversity Offsets- an end to Environmental Protection?* 2013  
[http://www.theecologist.org/campaigning/2145394/biodiversity\\_offsetting\\_an\\_end\\_to\\_environmental\\_protection.html](http://www.theecologist.org/campaigning/2145394/biodiversity_offsetting_an_end_to_environmental_protection.html) (accessed 23.06.14).

South African National Roads Agency Limited Proposed N2 Wildcoast Toll Highway Comments Report  
[http://www.nra.co.za/content/Volume\\_5\\_Comments\\_Report.pdf](http://www.nra.co.za/content/Volume_5_Comments_Report.pdf) (accessed 20.06.2014).

Ten Kate K 'Can biodiversity offsets help the rural population' *Biodiversity offsets- a briefing for the mining industry* 2005 *International Journal for Rural Development* available at [http://www.rural21.com/uploads/media/R21\\_Can\\_biodiversity\\_offsets\\_help...\\_0208.pdf](http://www.rural21.com/uploads/media/R21_Can_biodiversity_offsets_help..._0208.pdf) (accessed 21.06.14).

The Institute for European Environmental Policy's *Critical Review of Biodiversity offset track record*. Available at <http://www.fern.org/sites/fern.org/files/Critical%20review%20of%20biodiversity%20offsets.pdf> (accessed 15.02.2015).