

UNIVERSITY OF KWAZULU-NATAL

Towards a legal introduction of wetland mitigation banking in South Africa

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And my children, who did not always understand why it is so time consuming, but also learnt patience through the process.

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ABSTRACT

Currently wetland conservation in South Africa is being implemented through various levels of enforcement including draft biodiversity offset regulations,¹ which is based on the mitigation hierarchy principle.² Implementation of these regulations would provide an opportunity for larger scale wetland conservation through wetland mitigation banks, as offsets will then be implemented as a regular legal permit condition, demanding compliance.

Wetland mitigation banking benefits include established suitable wetland habitat prior to the need for the offset, reduced rehabilitation failure risk, improved compliance and better-quality planning and scientific input, which would be highly sought after by all permittees. This makes it a strong case for the development and implementation of the wetland mitigation banking option within South Africa.

This dissertation recommends that international wetland mitigation banking concepts (e.g. United States of America) be reviewed and adapted to local conditions. Expected challenges during drafting and implementation of these regulations includes alignment with the current Environmental Impact Assessment regime, lack of a spatial database of protected areas inclusive of land ownership and design of a well-structured credit management scheme.

¹ GN326 of GG40772, 7/04/2017.

² Ibid 14

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1. CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Worldwide there has been a trend for increasing development of Payments for Ecosystem Services (PES) — programmes that exchange value for land management practices intended to provide or ensure ecosystem services.³ Due to an increasing rate of destroy, degrade and depletion of natural capital, there is an increasing international awareness of PES programmes.⁴ Linked to these PES programmes is the ‘no-net loss’ principle which is based on the principle that increase in human impact and economic growth causes ongoing loss of natural resources, and that the residual losses should be counterbalanced by equivalent gains elsewhere.⁵

Within South Africa, correction of social disparities from the past is one of the main challenges being faced, therefore the country’s financial resources are aggressively being applied towards economic growth.⁶ This social disparities correction is done with a relative restricted view in terms of the way natural resources area utilised, hence could lead to a loss of these finite resources.⁷

However, a continuous loss of biodiversity and ecosystem services ultimately leads to the ‘no net loss’ or the ‘net gain’ principle as set out in the National Development Strategy⁸ (NDS) not being enforced, and the South African National Biodiversity Assessment⁹ (NBA) has confirmed that despite available policies and conservation efforts, biodiversity remains under high pressure from various ‘human induced factors and disturbances’.¹⁰ Therefore, locally there is concern that ecological deficits may undermine the Constitutional Right¹¹ of future

³ Nature Sustainable indicates over 550 active programmes around the globe and an estimated US\$36–42 billion in annual transactions in J Salzman, G Bennett, N Carroll, A Goldstein & M Jenkins “The global status and trends of Payments for Ecosystem Services.” (2018) 1 *Nature Sustainability* 136.

⁴ National Planning Commission (2011) National Development Plan 2030 – Our future, make it work. Pretoria: Government Printer.

⁵ M Maron, S Brownlie, JW Bull, C Evans, A von Hase, F Quétier, JEM Watson & A Gordon (2018) *The many meanings of no net loss in environmental policy*. 1 *Nature Sustainability Perspective* (available at <https://doi.org/10.1038/s41893-017-0007-7>)

⁶ K McCann (2018) Can a Conservation Land Bank sustainably fund protected area expansion and management? Proceedings from The Conservation Symposium.

⁷ Ibid.

⁸ National Development plan (2030) 201; 202; 215.

⁹ A Driver, KJ Sink, JN Nel, S Holness, L Van Niekerk, F Daniels, Z Jonas, PA Majiedt, L Harris & K Maze (2012) National Biodiversity Assessment. 2011. *An assessment of South Africa’s biodiversity and ecosystems. Synthesis Report*. South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria; and GN 276 of GG40733, 31/03/2017; 12.

¹⁰ GN 276 of GG40733, 31/03/2017; 12.

¹¹ Section 24 of The Constitution of the Republic of South Africa 1996. Herein referred to as the ‘Constitution’.

generations due to the demand for goods and services delivered by ecological infrastructure outstripping its supply.¹²

The most recent United Nations' (UN's) Global Assessment Report¹³, and the first global assessment following the Millennium Ecosystem Assessment (MEA)¹⁴, estimates that '>85% of wetlands present in 1700 had been lost by 2000 with the loss of wetlands currently being three times faster, in percentage terms, than forest loss', and Kotze, Breen & Quinn stated in 1995 already that 'half of South Africa's wetlands have been lost completely through transformation to other land uses'¹⁵.

Hence, with no regulated tools in place to reduce the rate of local impact/destroy/decay or to turn it around to a wetland gain the loss would cause non-compliance with the Convention of Biological Diversity¹⁶, to which South Africa is bound. However, Midgley warns that even though there is valuable international literature available, cognizance should be taken of the 'unique political, social, environmental and economic pressures faced by South Africa'.¹⁷ This is also emphasized by many commentators by confirming that local relevancy and the consideration of regional ecological challenges as well as local scientific and indigenous knowledge is essential.¹⁸ The biodiversity offsets are considered additions to the environmental regulatory scheme and should not replace the existing requirements placed on developers in terms of other environmental regulatory frameworks.¹⁹

It has been confirmed that this biodiversity loss can only be addressed by reviewing both the demand and supply side – some as a non-market related option, such as by consuming in a more sustainable way, or in a market-related context to replenish renewable natural capital

¹² National Development plan (2030) 48.

¹³ S Díaz; J Settele; E Brondízio, Eduardo. et al. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Advanced Unedited Version. Available online at: https://www.ipbes.net/sites/default/files/downloads/spm_unedited_advance_for_posting_htn.pdf. Accessed 9 May 2019.

¹⁴ Millennium Environmental Assessment (2005) *Ecosystems and human well-being: wetlands and water. Synthesis*. World Resources Institute: Washington District Capital (DC), United States of America (USA).

¹⁵ Kotze DC, Breen CM & Quinn N 1995. Wetland losses in South Africa. In *Wetlands of South Africa*, ed GI Cowan, Department of Environmental Affairs and Tourism. Pretoria, 263

¹⁶ Secretariat of the Convention on Biological Diversity, *Global Biodiversity Outlook 2* (CBD Secretariat, Montreal 2006)

¹⁷ D Midgley. *Biodiversity offsets Towards an Effective Legal Framework in South Africa*. (unpublished LLM Thesis, University of Cape Town, 2015) 76

¹⁸ ICMM IUCN (2012) Independent report on biodiversity offsets 17.

¹⁹ D Midgley. *Biodiversity offsets Towards an Effective Legal Framework in South Africa*. (unpublished LLM Thesis, University of Cape Town, 2015) 77

through interventions that rehabilitate and/or restore ecological infrastructure.²⁰ Solutions for this biodiversity loss needs to be conveyed in a manner that embraces the economic model of supply and demand whilst integrating conservation practice as part of good business practice²¹, and there are exciting international trends in the payments for ecological services options toolbox. Biodiversity offsets is one of the payments for ecosystem services tools²² contributing to the slowing down of ecosystem services loss²³ and conservation mitigation banks is a mechanism for securing the offset.²⁴

At an international biodiversity offset policy review event²⁵, biodiversity offsets were divided based on functioning, namely commensurability and commodification. Commensurability is the matching of biodiversity losses and gains, whereas the trading of biodiversity credits is defined as commodification. The international offset review concluded that biodiversity offset policies are restricted to commensurability, implying that offset policies are always exchanging biodiversity with biodiversity through means of various options of commodification (biodiversity credit trading).²⁶ With payments for ecosystems, the price of a biodiversity credit is mostly undervalued due to it being based on management measures expenses, rather than corresponding to the value of biodiversity.²⁷

Previous local research conducted in 2008²⁸ and 2015²⁹ indicated that the implementation of a wetland mitigation bank needs further review of international experience, and will ‘require a

²⁰ P Lukey, T Cumming, S Paras, I Kubiszewski & S Lloyd ‘Making biodiversity offsets work in South Africa – A governance perspective’ (2017) 27 *Ecosystem Services*; Department of Environmental Affairs, 2011a; National Planning Commission, 2011.

²¹ K McCann (2018) Can a Conservation Land Bank sustainably fund protected area expansion and management? Proceedings from The Conservation Symposium.

²² K ten Kate, J Bishop & R Bayon, ‘Biodiversity offsets: Views, experience, and the business case’ (2004) Gland & Cambridge: IUCN & Insight Investment 78.

²³ P Lukey, T Cumming, S Paras, I Kubiszewski & S Lloyd ‘Making biodiversity offsets work in South Africa – A governance perspective’ (2017) 27 *Ecosystem Services* 281.

²⁴ GN276 of GG40733, 31/03/2017; 38.

²⁵ NS Koh, T Hahn & WJ. Boonstra ‘How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies’ (2019) 232 *Journal of Environmental Management* 679–691.

²⁶ Ibid at 688.

²⁷ NS Koh, T Hahn & WJ. Boonstra ‘How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies’ (2019) 232 *Journal of Environmental Management* 679.

²⁸ D Cox, & D Kotze (2007) Wetland mitigation banking assessing the appropriateness of wetland mitigation banking as a mechanism for securing aquatic biodiversity in the grassland biome of South Africa. Institute of Natural Resources (INR) in collaboration with Centre for Environment, Agriculture and Development (CEAD).

²⁹ DM Macfarlane, R Van Deventer, & A Von Hase (2015) Deliverable 2: Review of local context and associated constraints and opportunities for piloting a conservation banking scheme. Version 0.1 Unpublished draft report prepared for eThekweni Municipality and the Critical Ecosystem Partnership Fund prepared by Eco-Pulse Environmental Consulting Services and Forest Trends.

bold commitment from regulating authorities to establish a supportive policy and implementation framework necessary for bank establishment'.³⁰ These aspects are further considered in this dissertation.

1.2 KEY DEFINITIONS AND OFFSET CONCEPTS

1.2.1 Key definitions

For clarity, the following key definitions are included early on in the dissertation, of which necessary detail aspects are included in the following chapters, as set out below:

The National Water Act (Act No. 36 of 1998) (Herein referred to as 'NWA') defines wetlands as 'land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which in normal circumstances supports or would support vegetation typically adapted to life in saturated soils.' This definition is important and should be foregrounded in the dissertation.

The definition of a wetland mitigation bank applicable for this discussion has been adapted from the USA Rule³¹ to the following:

a site, or combination of sites, where resources, specifically wetlands are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by environmental authorisation, water use licenses and other relevant permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.

1.2.2 Offset concepts

The wetland mitigation bank concept was developed in the United States in the late 1980s and have been implemented since 1993³². It is defined as an area of wetland that has been restored, created, or in some circumstances, conserved and then set aside to compensate for impacts on

³⁰ Ibid at 67.

³¹ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008, p19671.

³² 'Understanding the basics of wetland mitigation banking' available at <https://www.investopedia.com/articles/dictionary/031615/understanding-basics-mitigation-banking.asp>, accessed on 11 April 2018.

wetlands in the future.³³ It is critical to understand that the habitat proposed for offset, would be in an impacted state prior to considering of an offset habitat.

Koh et al³⁴ recently delivered interesting results after an international biodiversity offset review, stating that not all biodiversity offset policies should be perceived as ‘markets for ecosystem services’. Koh divided case study biodiversity offsets based on the institution from which it is organised into three groups, namely Public Agency, Mandatory Market and Voluntary Offset. They grouped together Government managed agencies as Public Agency, a Mandatory Market represents the market’s dispersed competition and the community’s spontaneous responses are grouped together as Voluntary Offset³⁵. Koh³⁶ further comments that the Public Agency and Mandatory Market are typical ideal offset types due to the legal compensation commitments required from the developer, whereas the Voluntary Offset is lacking legal enforcement, however the developer does compensate. The proposal from this dissertation is to develop a Mandatory Market Offset model in South Africa, linked to the benefits provided by the banking concept (See Section 2.1).

1.3 BRIEF OVERVIEW OF THE DISSERTATION

The primary research question in this dissertation is whether South Africa needs a legal framework regulating wetland mitigation banks. Such a framework would form part of the biodiversity permitting regime and future offsetting regulations, which currently involves environmental authorisations, water use licenses and mining rights amongst other permits in the environmental context. Once this question has been addressed, this dissertation will seek to set a good model for a wetland mitigation bank based on an analysis of selected provisions in foreign wetland mitigation banking regulations. In exploring the above issues, subsidiary research questions will analyse wetland mitigation banking legislation in a context of what it should achieve. An analysis of the definitions, intricate concepts, and management measures is required for this. The objectives and value of mitigation banking will be discussed in exploring whether they are compatible with the Constitutional and legislative scheme

³³ Ibid.

³⁴ NS Koh, T Hahn & WJ. Boonstra “How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies” (2019) 232 *Journal of Environmental Management* 689

³⁵ Streeck, W., Schmitter, P.C. *Governance to Social Order Community, Community, market, state- and associations? The prospective contribution of interest governance to social order.* Eur. Socio Rev. (1985) 1 (2), 119

³⁶ NS Koh, T Hahn & WJ. Boonstra “How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies” (2019) 232 *Journal of Environmental Management* 681

regulating the environment in South Africa. A broad analysis of the relevant South African environmental law is required in order to address this.

Following the confirmation of the need of a national wetland mitigation banking policy in Chapter 2, Chapter 3 introduces the fundamental concepts of what the wetland mitigation banking legislation ought to do, which includes review of a best practice international wetland mitigation banking model, guidelines of when to utilise a wetland mitigation bank, and the benefits associated therewith in details such as the definitions and an in-depth look into the intricate concepts such as credits.

In Chapter 3.4, the existing national legislative regime and tools available for attention during compilation and implementation of wetland mitigation banks are reviewed in light of the favourable endorsement of implementing offsets and mitigation banks. The laws and principles applicable to wetland mitigation banking are analysed in order to demonstrate whether they are compatible with the concept, and concludes with a discussion on the available national legislative tools, frameworks, strategies and plans.

Chapter 5 deals with the challenges of implementing wetland mitigation banking by elaborating on the integration with other legislation such as the lack of an adequacy of policy, alignment with existing Environmental Impact Assessment (EIA) legislation, the public consultation legal regime and the need for national biodiversity registers. This chapter also explains the needs of successful commercial wetland mitigation banking, and concludes with the way forward with existing legislation and available legislative tools within South Africa.

Chapter 6 summarises the need for wetland mitigation banking in South Africa and specifies the outcome which the wetland mitigation banking regulations would need to achieve as well as the benefits which such legislation would contribute. The challenges faced within which the legislation would be required or recommended for the formal introduction of mitigation banking into the permitting context is discussed. Chapter 6 concludes the dissertation arguing that a dedicated wetland mitigation banking scheme will be beneficial to the proposed offset banking system. The requirements of such a system is discussed and a conclusion on the legal tools available and challenges faced is discussed.

1.4 PURPOSE OF THE DISSERTATION

The purpose of this dissertation is to evaluate whether South Africa needs mitigation banking legislation and following that affirmation, international best practice has been reviewed to provide a model of what a good wetland mitigation banking scheme should provide. After setting out the model mitigation banking system, this dissertation assesses the various conceptual issues required in mitigation banking are explored, and an analyses of mitigation banking and current national opinions in the field of offsetting provides the challenges it would need to deal with is included as well as various conceptual issues such as integration with existing legislation. The business of banking reviews the commercial aspects and pitfalls that have been highlighted by the international wetland mitigation banking model which was used for comparison. Attendance of the 12th annual course on ‘Mitigation Banking and In-Lieu Fee Program Interagency Review Teams’³⁷ in Shepherdstown, West Virginia, United States of America from 25-29th June 2018, presented by the US Army Corps of Engineers, US EPA and US Fish & Wildlife Service, in partnership with The Conservation Fund, provided in-depth insight into the USA wetland mitigation banking model. This knowledge contributed to an in-depth understanding of the regulatory framework within which the USA operates their wetland mitigation banks, which provided the insight for the comparative assessment of the legislative requirements for implementation of wetland mitigation banks within South Africa.

The relevant offset and mitigation banking provisions within the current South African legislation are reviewed, and analyses of these legislative provisions are done in comparison to the selected international ‘model’ mitigation banking systems and challenges expected when implementing.

In conclusion, it will be suggested that there is a need for mitigation banking to play in South Africa in the environmental permitting context, the challenges to be faced during compilation and implementation are discussed and proposals for facing the challenges are included.

1.5 METHODOLOGY

This dissertation specifically includes a comparative review of the USA Mitigation Banking offset and in-lieu fee program as in-depth knowledge was obtained from their US Army Corps

³⁷ ‘Conservation Leadership Network’ available at <https://www.conservationfund.org/our-work/conservation-leadership-network/upcoming-courses/877-training-course-for-mitigation-banking-in-lieu-fee-program-interagency-review-teams> accessed on 8 April 2018.

of Engineers, US EPA and US Fish & Wildlife Service, in partnership with The Conservation Fund, during preparation of this dissertation.³⁸ During comparative reviews, caution should be taken of potential pitfalls of providing biased opinions, however this assessment includes a detail assessment of one of the pioneer countries in wetland mitigation banking systems worldwide. Therefore, this assessment therefore provides valuable insight for developing a wetland mitigation banking system in South Africa.

2. CHAPTER 2: DOES SOUTH AFRICA NEED MITIGATION BANKS?

This chapter will explore whether South Africa needs wetland mitigation banking legislation. The full analysis of a wetland mitigation bank follows in Chapter 3, but in short, a wetland mitigation bank is one or more pieces of property where wetlands are managed to provide compensatory mitigation for impacts which has already been permitted. Credits are then obtained for these wetland management actions (which could include rehabilitation, establishment, enhancement or preservation), which can be sold to permittees, thereby transferring the permittee's obligation to this wetland bank. The current scene in terms of where this concept of wetland mitigation banking would fit in in South Africa, is focused on in this Chapter.

South Africa is committed to achieving the United Nations Development Programme (UNDP) Sustainable Development Goals (SDG) which is entrenched in our national legislature. Specifically relevant to biodiversity offsetting are SDG 8 (Decent work and economic growth)³⁹, 10 (Reduced inequalities)⁴⁰, 15 (Life on land)⁴¹ and 17 (Partnerships for the goals)⁴², of which SDG 15 (Life on land) is committed to protecting and restoring sustainable

³⁸ 'Conservation Leadership Network' available at <https://www.conservationfund.org/our-work/conservation-leadership-network/upcoming-courses/877-training-course-for-mitigation-banking-in-lieu-fee-program-interagency-review-teams> accessed on 8 April 2018.

³⁹ 'Sustainable Development Goal 8: Decent Work and Economic Growth' available at <http://www.undp.org/content/sdfinance/en/home/sdg/goal-8--decent-work-and-economic-growth.html>, accessed on 8 April 2018.

⁴⁰ 'Sustainable Development Goal 10: Reduced inequalities' available at (<http://www.undp.org/content/sdfinance/en/home/sdg/goal-10--reduced-inequalities.html>), accessed on 18 January 2019

⁴¹ 'Sustainable Development Goal 15: Life on land' available at (<http://www.undp.org/content/sdfinance/en/home/sdg/goal-15--life-on-land.html>), accessed on 18 January 2019..

⁴² 'Sustainable Development Goal 17: Partnerships for goals', available at (<http://www.undp.org/content/sdfinance/en/home/sdg/goal-17--partnerships-for-the-goals.html>), accessed on 18 January 2019.

use of terrestrial ecosystems and halting biodiversity loss⁴³ and provides ‘Payment for Ecosystem services’ as one of the solutions⁴⁴, by explaining that ‘whoever preserves or maintains an ecosystem service should be paid for doing so’. The Equator Principles⁴⁵ and Performance Standard 6 of the International Finance Corporation (IFC)⁴⁶ also support offset and banks by affirming that offsets may only be used after applying the mitigation hierarchy, that the offset should be designed to achieve measurable conservation outcomes, based on the no-net loss principles.⁴⁷ The concept of offsets is thus rooted deep within the UNDP principles for sustainable development.

South Africa currently does not have a promulgated, national policy for biodiversity offsetting, nor an explicit offsetting provision in the law, although the international commitments have been made, and there is a legal provision for use of offsets in the National Environmental Management Act (NEMA)⁴⁸, as discussed in detail in Chapter 4.1.2. The offset concept is also linked to the ‘polluter pays principle’ entrenched in NEMA.⁴⁹ Biodiversity and wetland offsets are included in ratified international sustainable development goals, literature, policy frameworks and draft policy in South Africa, but the current spotlight is on a national policy level more focussed on implementing offsets than on the subsequent step, which includes financial and land use planning, implementation, compliance monitoring and long-term management of these offsets, which could be facilitated through a mitigation bank. Furthermore, the lack of promulgated final national offset regulations enables ad hoc requirements for offsets in the various competent authority government departments⁵⁰. This lack of a consistent and fair rule for assessment of residual impacts on wetlands, leads to a continuous loss of wetlands and related wetland ecosystem services within the South African environment, which is against the international commitments. Without a system such as

⁴³ ‘#Envision2030 Goal 15: Life On Land’ available at <https://www.un.org/development/desa/disabilities/envision2030-goal15.html>, accessed on 18 January 2019.

⁴⁴ ‘Payments for ecosystem services’ available at <http://www.undp.org/content/sdfinance/en/home/solutions/payments-for-ecosystem-services.html>, accessed on 18 January 2019.

⁴⁵ ‘The Equator Principles’ available at <https://equator-principles.com/about/>, accessed on 18 January 2019.

⁴⁶ International Finance Corporation (2012) Performance standard 6. Biodiversity conservation and sustainable management of living natural resources. IFC, Washington, D.C.

⁴⁷ Ibid

⁴⁹ Section 2(4)(p) of NEMA.

⁵⁰ Offsets can be included in Environmental Authorisations as per NEMA, Water Use Licences as per NWA and protected forest destruction and protected tree removal licences as per the National Forest Act (Act 84 of 1998).

wetland mitigation banking, wetland offset implementation is conducted in an ad-hoc approach which is inefficient and costly in terms of economics and resources, as discussed further in Chapter 3.2.

2.1 BENEFITS OF A WETLAND MITIGATION BANK

The benefits of a wetland mitigation bank can be considered from various perspectives, namely economical, ecological and social. These benefits prompted the growing world-wide industry of banking systems⁵¹:

Probably the greatest benefit of the wetland mitigation banking concept is that it is typically planned and designed in advance of project impacts⁵², and the availability of credits when needed⁵³. The consolidated compensation from a mitigation bank offers often more ecological value than many small and fragmented projects, with more efficient, streamlined and strategic land use planning and the financial resources, planning and scientific expertise brought together is more practical than applied to project-specific mitigation,⁵⁴ taking advantage of the economies of scale throughout the banking process, i.e. buying the land, compiling management plans, establishing finance plans, and the permitting process⁵⁵. The economies of scale can also be applied to more efficient use of competent authority resources,⁵⁶ due to compliance monitoring only being required at a single site, in comparison to project-specific locations distributed throughout the catchment.

From personal experience, one of the biggest challenges during fulfillment of an offset condition, is finding available land, which the bank eliminates. This links to the additional

⁵¹ K ten Kate, J Treweek & Ekstrom, J. *The use of market-based instruments for biodiversity protection –The case of habitat banking* – Technical Report and Case Studies. (2010) Available at <http://ec.europa.eu/environment/enveco/index.htm>, accessed on 18 January 2019.

⁵² Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

⁵³ K ten Kate, J Treweek & Ekstrom, J. *The use of market-based instruments for biodiversity protection –The case of habitat banking* – Technical Report and Case Studies. (2010) Available at <http://ec.europa.eu/environment/enveco/index.htm>, accessed on 18 January 2019.

⁵⁴ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

⁵⁵ K ten Kate, J Treweek & Ekstrom, J. *The use of market-based instruments for biodiversity protection –The case of habitat banking* – Technical Report and Case Studies. (2010) Available at <http://ec.europa.eu/environment/enveco/index.htm>, accessed on 18 January 2019.

⁵⁶ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

challenge⁵⁷ in Figure 2-1, which depicts the increase in difficulty in finding a suitable offset as the percentage of remaining ecosystem required to meet conservation target increases.

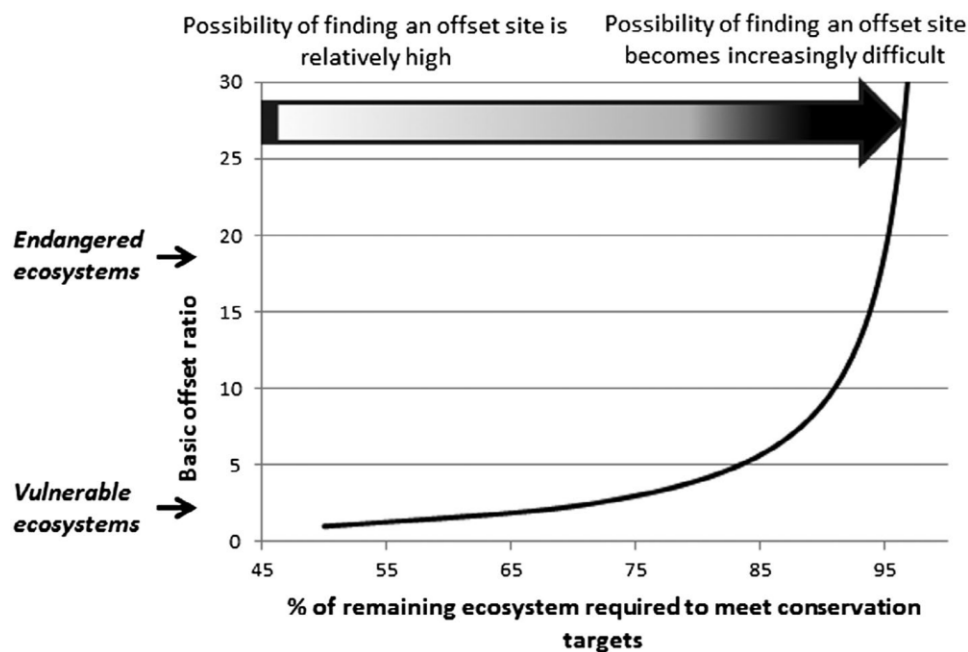


Figure 2-1. Basic offset ratios⁵⁸

This Chapter has confirmed that introducing wetland mitigation banking legislation in South Africa will contribute to meeting the international conservation commitments made in terms of the CBD⁵⁹, the Millennium Environmental Assessment (MEA)⁶⁰, the Business and Biodiversity Offset Programme (BBOP)⁶¹, and the International Finance Corporation (IFC)⁶² and will minimise the current destruction rate of wetlands by means of stricter enforcement, monitoring and continuous management of rehabilitation efforts against the permitted impacts. Rehabilitation, as one of the potential outcomes from wetland offset banking, will not only be conducted, but will be monitored and managed in the long-term.

⁵⁷ S Brownlie, A von Hase, M Botha, J Manuel, Z Balmforth & N Jenner (2017) 35(3) Biodiversity offsets in South Africa – challenges and potential solutions. *Impact Assessment and Project Appraisal* 250.

⁵⁸ Ibid at 250. 'Figure 2 illustrates how the basic offset ratio relates to ecosystem threat status and the percentage of the affected system that is still required to meet agreed conservation targets. Relatively low ratios apply to residual impacts on vulnerable systems but rapidly increase where more threatened ecosystems (e.g. endangered systems) are affected.'

⁵⁹ Secretariat of the Convention on Biological Diversity, *Global Biodiversity Outlook 2* (CBD Secretariat, Montreal 2006)

⁶⁰ Millennium Environmental Assessment (2005) *Ecosystems and human well-being: wetlands and water. Synthesis*. World Resources Institute: United States of America (USA).

⁶¹ Business and Biodiversity Offsets Programme (BBOP) *Standard on Biodiversity Offsets* (2012) Washington DC: Business and Biodiversity Offsets Programme, available at <http://bbop.forest-trends.org/> (accessed 16 September 2018).

⁶² International Finance Corporation (2012) Performance standard 6. Biodiversity conservation and sustainable management of living natural resources. IFC, Washington, D.C.

3. CHAPTER 3: WHAT OUGHT WETLAND MITIGATION BANKING LEGISLATION DO?

This chapter will explore the aim of wetland mitigation banking, explaining it in relation to the underlying concepts on which successful functioning of a bank revolves. This dissertation will not provide specific regulations for South Africa, but rather the concept, theory and value of implementing mitigation banks in South Africa.

Below in Box 1 is a typical example of the value of mitigation banks in South Africa.

The National Department of Transport (DOT) planning requires implementation of a national strategic upgrade project of 600km new railway which transects 81ha of sensitive wetlands, which has been identified in the Environmental Impact Assessment (EIA) process as of ‘high’ significance. This route remains the optimal route after implementing assessments of alternatives and following the environmental impact mitigation sequence. These wetlands will therefore either be lost, or the offset mitigation mechanism can be applied where the significant residual negative impacts on biodiversity and ecosystem services can be offset. Would there have been a wetland mitigation bank available which meets the offset requirements for the DOT, they could have purchased wetland offset credits and ensured the residual biodiversity impacts are successfully offset and managed by a responsible third party, whilst they focus on implementing railways within South Africa.

Box 1. A typical example of the value of a mitigation bank

3.1 THE OFFSETTING CONCEPT

The “offsetting” concept is already being implemented in several countries, such as the United States of America (USA)^{63,64}, Australia^{65,66}, New Zealand⁶⁷, China⁶⁸ and United Kingdom

⁶³ R Reppert (1992) National wetland mitigation banking study: wetland mitigation banking concepts (Tech. Rep. 92-WMB-1, Institute for Water Resources, U.S. Army Corps of Engineers, Alexandria, Virginia).

⁶⁴ ‘Section 404 of the Clean Water Act Mitigation Banking Factsheet’ available at <https://www.epa.gov/cwa-404/mitigation-banking-factsheet>, accessed on 7 April 2018.

⁶⁵ ‘Policy statement: Advanced environmental offsets under the EPBC Act’ available at <https://www.environment.gov.au/epbc/publications/policy-statement-advanced-environmental-offsets-under-epbc-act> accessed on 11 April 2018.

⁶⁶ ‘Australia: Biodiversity and environmental offsets. Environment & Planning National Review 2016’ available at <http://www.mondaq.com/australia/x/523988/Environmental+Law/Biodiversity+and+environmental+offsets> accessed on 11 April 2018.

⁶⁷ Guidance on Good Practice Biodiversity Offsetting in New Zealand (2014)

⁶⁸ B Madsen, N Carroll, K Moore Brands, Kelly (2010) State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide. 44 Available at: <http://www.ecosystemmarketplace.com/documents/acrobat/sbdmr.pdf>, (accessed September 2018).

(UK)⁶⁹ and in some instances linked to implementation of mitigation/conservation banking programmes. Some of these mitigation banking programs have been criticized even on an international level and after in-depth national reviews have led to improvements of the programs. The main points of critique of mitigation banking programs include the remaining temporal loss of wetlands due to release of credits prior to ecological outputs gained, and disconnection between impact sites and compensation sites⁷⁰

Therefore, in order to understand the nuts and bolts of a successful wetland mitigation banking program, an evaluation should be made of a credible international wetland mitigation banking program which has gone through the teething phases.

However, these international lessons learnt should be evaluated against the local challenges, such as land reform, which has already been experienced during implementation at biodiversity stewardship sites.⁷¹ The analysis of local wetland offset banking is based on published articles as well as presentations at national Indaba's and annual conferences, which have highlighted the challenges with the mitigation banking concept based on regulator experiences, as well as personal experiences with offset and banking model implementation on a project-specific basis.

3.1.1 The USA wetland mitigation banking offset concept as a model

In order to consider existing international best practice, an international wetland banking concept was used for benchmarking and comparing the available and due required legislative framework currently within South Africa.

It was already in 1989 that President Bush stated that “no net loss” of wetlands was a goal of his administration, and that was reflected in interagency agreements soon afterward. The Corps of Engineers (National Government), and the Environmental Protection Agency (EPA), has authority to issue permits with conditions to ensure successful implementation of the no-net loss goal. The no-net loss principles require that an applicant should first consider the impact mitigation hierarchy, and only when unavoidable, the permit may be issued with ‘compensatory mitigation’ conditional requirements. The compensatory mitigation includes

⁶⁹ ‘Biodiversity offsetting in England Green paper September 2013’ available at https://consult.defra.gov.uk/biodiversity/biodiversity_offsetting/supporting_documents/20130903Biodiversity%20offsetting%20green%20paper.pdf accessed on 11 April 2018.

⁷⁰ Harold L, Scemama, P and Vaissière, A. ‘Should we be wary of mitigation banking? evidence regarding the risks associated with this wetland offset arrangement in Florida.’ (2017) 135 *Ecological Economics* 136–149.

⁷¹ SANBI (2017) *The Business case for biodiversity stewardship*. A report produced for the Department of Environmental Affairs. 2

options of restoration, creation, enhancement and in exceptional cases, preservation of other wetlands as compensation for impacts to natural wetlands. The applicant (permit recipient, or referred to as the permittee) carries out 'permittee responsible' mitigation whether by a permit-by-permit basis, or within a single user mitigation bank. Third-party mitigations include commercial mitigation banks, in-lieu fee programmes, cash donations or revolving funding programmes, which requires another party to accept payment from the permittee and assumes the permittee's mitigation obligation.

The various forms of mitigation banking are explained in more detail⁷². Commercial mitigation banks have sponsors with up-front financing, and can therefore acquire and plan their mitigation bank site before submission of the proposal for consideration for approval of the competent authority. The credit releases are tied to performance milestones, and credit releases are approved by the competent authority. In-lieu fee programs are approved prior to the use for compensation with advanced credits based on future project performance with limitations on use prior to project implementation. Cash donations is made by a permittee to satisfy the mitigation requirements stipulated in the approval/licence. There is often a limited evaluation process with challenges for tracking of compensatory mitigation implementation. Revolving funding is required for in-lieu fee programmes to minimise the lag period between when the permitted impacts occur and when the compensatory mitigation is completed.

Twenty years after implementation of the no-net loss policy in the USA, the National Research Council⁷³ conducted an in-depth study on the success of achieving this goal of compensation for wetland losses under the United States (US) Clean Water Act, with very specific recommendations on how to improve the mitigation system. The recommendations from this study were assessed and included in the current '2008 Rule',⁷⁴ which has since been implemented. The recommendations focused on various key elements identified as being problematic and additional guidelines or more stringent requirements were brought into the 2008 Rule⁷⁵: These included:

- Guidelines for initial release of credits;
- Use of financial assurances;

⁷² R Reppert (1992) National wetland mitigation banking study: wetland mitigation banking concepts (Tech. Rep. 92-WMB-1, Institute for Water Resources, U.S. Army Corps of Engineers, Alexandria, Virginia).

⁷³ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

⁷⁴ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008

⁷⁵ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008

- Site protection;
- Ecological performance standards;
- Use of preservation; and
- Dispute resolution.⁷⁶

One of the main concerns coming out of the review study, was the conclusion that the no-net loss policy was not being achieved. The loss of wetland habitat had slowed down since the implementation of the policy, however from the data collected and managed by the Corps it indicated that the require mitigation projects were often not undertaken, or failed to meet the permit conditions. Furthermore, data collected did not include wetland functions, therefore there was no indication that the mitigation measures did indeed contribute to the no-net loss policy. The recommendations therefore included that wetland area and functions lost and regained should be tracked in a national database, which should ensure strict quality assurance measures for data entry, and the Corpse in collaboration with the states, should encourage establishment of catchment based organisations for tracking, monitoring and managing wetlands in public ownership or under easement.

For review of a model wetland mitigation banking scheme, the USA was chosen as a comparative international example as it is one of the few international jurisdictions that has such a long-standing, well-developed wetland banking scheme and has gone through a national in-depth review process and based on the outcome of the review, amendments made to close the loop-holes and enhance the overall success of achieving the stated no-net loss goal.⁷⁷ As discussed above, the key conclusions and recommendations which has been implemented after the review, has improved the outcomes of this specific mitigation banking model. However, as Midgley⁷⁸ has also acknowledged, care should be taken to consider the unique local conditions within South Africa.

⁷⁶ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018

⁷⁷ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

⁷⁸ D Midgley. *Biodiversity offsets Towards an Effective Legal Framework in South Africa*. (unpublished LLM Thesis, University of Cape Town, 2015) 76

3.2 WHAT DOES MITIGATION BANKING LEGISLATION NEED TO ACHIEVE?

Wetland mitigation banking legislation needs to ‘manage the approval and review process of compensatory mitigation of restoration, establishment, enhancement or preservation of aquatic resources to offset permitted impacts’.⁷⁹ In order to improve understanding of the functioning of a wetland mitigation bank, a hypothetical example is included in Box 2 below.

Wetland mitigation bank concept illustrative example

A local municipality is seeking environmental authorisation (EA) for proceeding with installation of a sewer line linking a new housing development with the existing bulk sewer line. After reviewing the proposed routes in terms of avoidance, minimisation, as well as rehabilitation of disturbed areas, it remains the opinion of the wetland specialist that the loss of swamp forest will be residual and the need for an offset is identified.

Elsewhere in the same catchment a private farmer (in this context acting as the commercial banker) has realised that the impacted swamp forest on his land cannot be utilised for sugar cane farming, or any other worthwhile agricultural purposes. Furthermore, he has identified the potential for rehabilitation of the swamp forest and generating a revenue by means of supply of wetland credits through establishing a wetland bank by registering a conservation servitude on the portion of his property covered by swamp forest and the ecological defined buffer surrounding the swamp forest. This conservation servitude would remain valid, even if the property is sold in the future.

The farmer manages this conservation servitude in terms of an approved wetland bank program, which includes details on aspects such as rehabilitation, management and maintenance plan, with specifics in terms of monitoring requirements, long-term management and adaptive management meeting the requirements of the banking regulations. The banking program also stipulated the number of hectares of swamp forest per credit and the economic value of each credit.

The credits generated by this swamp forest bank has been made available for sale on the national wetland credit register, which captures all transactions, reflecting an updated availability of credits. Therefore, the local municipality needing to install the sewer line, may purchase the necessary credits from the farmer, as per the swamp forest hectare: credit ratio stipulated in the EA. The banker will remain responsible for management of the swamp forest as per his defined banking approval and the local municipality may proceed with installation of the sewer line after the wetland banking credit transaction has been finalised.

⁷⁹ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018

Box 2. Illustrative example of a wetland mitigation bank

3.2.1 When to utilise a mitigation bank

In the South African draft National Biodiversity Offset Regulations⁸⁰, there are clear guidelines in terms of the circumstances when offsets should be implemented. The conditions are dependent on the significance of residual impacts of the proposed development on biodiversity and ecosystem services - if they are predicted as a ‘medium’ to ‘high’ significance as a result of that development, an offset is required.⁸¹ An example of such an impact is included in Box 2.

Residual impacts of ‘very high’ significance is considered fatally flawed in terms of biodiversity loss and should therefore not be authorised, whereas impacts of ‘low’ significance would not require offsets.⁸² A fatally flawed or a ‘very high’ significance project would typically include proposed mining within an area classified as a critical biodiversity area within the provincial conservation plan as it provides ecosystem functions that would be seriously affected should it be impacted. An example of a ‘low’ significance impact would be 0.5ha of a 100-year old sugarcane field that includes wetlands in the lower-lying areas of the field, with the impacted section of the wetland performing limited functionality to no wetland flora remaining, and the impacted area of the wetland, not affecting the overall hydrological functionality of the wetland in the catchment. Hence, no offset would be required for this ‘low’ significant impact.

3.3 ANALYSIS OF A WETLAND MITIGATION BANK

In order to comprehend the full benefits and challenges of developing and implementing a wetland mitigation banking system, key concepts, definitions, assumptions and requirements are analysed in this Section.

3.3.1 The intricate concept of credits

The operations of any conservation bank are interlinked between compensation and offsetting, as it is a mechanism for delivering compensation or offset outcomes.⁸³ Establishment of all

⁸⁰ GN276 of GG40733, 31/03/2017; 32

⁸¹ GN276 of GG40733, 31/03/2017; 31

⁸² Ibid.

⁸³ Assessing the Appropriateness of Wetland Mitigation Banking as a Mechanism for Securing Aquatic Biodiversity in the Grassland Biome of South Africa (WRC Report No KV 200/08).

wetland banks has been in response to a regulatory driver (permit with wetland offset conditions), which acts as a trigger and creates a level of certainty regarding demand for and supply of credits and appears essential for a market to develop.⁸⁴The conservation measures and outcomes are translated into credits that are calculated according to a clear set of pre-determined rules, with specific rules for currencies/metrics for transacting, geographic boundaries in which it can trade, as well as other guidelines/norms and standards⁸⁵ such as timeframes within which to operate.⁸⁶ These credits are then sold to developers with debits as set out in their approvals/authorisations/permits with a conditional requirement for creating/restoring/rehabilitating/ the habitat or resource prior to them impacting on the permitted habitat or resource.⁸⁷

Banks needs to be managed by a type of mitigation banking instrument that ‘governs the establishment, operation and use of a mitigation bank’,⁸⁸ which has been reviewed and approved by the competent authorities’ review panel. An inter-agency review team which consists of government and institutional delegates is critical throughout all phases of the banking documentation review, approval and operational phases of the bank.

Requirements for offset includes a long-term contribution to biodiversity conservation, through a commitment for at minimum the duration of the residual impact on biodiversity, but preferably a commitment in perpetuity.⁸⁹ This long-term commitment includes requirements for a well-structured funding agreement.

The banks’ approved market is confined to a geographically defined area, denoted as ‘service areas’ which restricts the economical market of the bank.⁹⁰ Detail and careful planning by experienced bankers and ecologists are required upfront in the mitigation banking planning

⁸⁴ A Von Hase (2013) Deliverable 1.1: Preliminary review of international experience with conservation banking Version 0.1 Unpublished draft report prepared for eThekweni Municipality and the Critical Ecosystem Partnership Fund prepared by Forest Trends and Eco-Pulse Environmental Consulting Services 3.

⁸⁵ Section 11 (b) of NEMBA.

⁸⁶ A Von Hase (2013) Deliverable 1.1: Preliminary review of international experience with conservation banking Version 0.1 Unpublished draft report prepared for eThekweni Municipality and the Critical Ecosystem Partnership Fund prepared by Forest Trends and Eco-Pulse Environmental Consulting Services 1.

⁸⁷ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

⁸⁸ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008, p19671.

⁸⁹ GN 276 of GG40733, 31/03/2017; 27.

⁹⁰ Service Area Determination. Session 6. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

process, for instance, choosing the correct site for the bank is of utmost importance, as a suitable position within the local catchment and landscape position and the ability to establish the desired wetland functions, hydrological variability, species richness, biological dynamics and hydrological regime are all important factors that affect wetland restoration and mitigation of loss. Furthermore, it should be recognised that certain wetland types, e.g. peatlands, cannot be effectively restored, and mitigation efforts need to consider that during their mitigation planning, with strong motivations for avoidance rather than mitigation. It should be considered that the more degraded the local site and catchment, the less likely it will support a high-quality project.⁹¹

A commercial mitigation banker is defined as a third-party responsible for the mitigation banking. It is typically a private firm that provides for capital initiation, or sponsorship, and recovers cost and earns a margin of return by selling mitigation credits to permittees.⁹²

Biodiversity finance is defined by the Biodiversity Finance Plan (BIOFIN) programme as the combination of ‘private and public financial resources which is used to conserve and restore biodiversity, investments in commercial activities that produce positive biodiversity outcomes, and the value of the transactions in biodiversity-related markets such as habitat banking.’⁹³ This concept is further explained in Section 4.2.3.

The mitigation bank operates with *credits*, which are generated by implementing a range of conservation measures on a specific piece of land, with the option for selling to developers in debt of credits due to the anticipated residual impacts on natural resources as part of their authorized development. An advantage of these credits is that they can be created independently and in advance of the need for credits.⁹⁴ The preference hierarchy for credit establishment being restoration, establishment, enhancing and lastly, preservation.⁹⁵ In the USA credit determination is based on economic, ecological and regulatory aspects and the motivation therefore is included in the mitigation banking application submission to the State

⁹¹ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

⁹² <https://www.nap.edu/read/10134/chapter/7#84>, accessed September 2018.

⁹³ UNDP (2018). *The 2018 BIOFIN Workbook: Finance for Nature*. The Biodiversity Finance Initiative. United Nations Development Programme: New York 6.

⁹⁴ A Von Hase (2013) Deliverable 1.1: Preliminary review of international experience with conservation banking Version 0.1 Unpublished draft report prepared for eThekweni Municipality and the Critical Ecosystem Partnership Fund prepared by Forest Trends and Eco-Pulse Environmental Consulting Services 1.

⁹⁵ Conservation Leadership Network’ available at <https://www.conservationfund.org/our-work/conservation-leadership-network/upcoming-courses/877-training-course-for-mitigation-banking-in-lieu-fee-program-interagency-review-teams> accessed on 8 April 2018.

(competent authority).⁹⁶ The credits represent accrual or attainment of aquatic functions at the site, based on the resources being restored – i.e. restoration, establishment, enhancement or preservation, with preservation being rewarded with the least credits.⁹⁷ The baseline condition of the impacted wetland influences the allocation of credits, with the seriously degraded sites offering the highest opportunity for credit production. A regulatory process of approval by the Army Corps is a pre-requisite for permittees to acquire these credits to meet their compensatory mitigation offset requirements. During the approval process, the Army Corps confirms whether the measurable wetland loss is comparable to the credits established in the bank. It should specifically be stated that the competent authority does not set the price of the credits, it is determined by the sponsor of the mitigation bank.⁹⁸

Because mitigation banks' credit release schedules are tied to ecological performance, the banker have a financial incentive to produce results timely in order to continue operating.⁹⁹ In order to ensure compliance with the regulations, the competent authority (preferably the full inter-agency review team based on a site visit) has the discretion to take appropriate actions, such as reducing the approved credit release allocation, if the credits are not produced in accordance with the approved standards. Furthermore, the long-term management funding should be included as a performance milestone for credit release.¹⁰⁰

3.3.2 Administrative management measures

The three aspects of site protection, financial assurances and long-term management/stewardship are analysed as part of the administrative management measures of a mitigation bank.

Site protection

In order to secure the longevity of the mitigation bank, the confirmation of long-term protection is vital. This also includes consideration of the existing legal constraints and/or other restrictive agreements/conditions when determining which site protection mechanism provide sufficient

⁹⁶ Credit determination. Session 9. A training course for mitigation banking and in-lieu fee program Interagency Review Teams 2018.

⁹⁷ Ibid.

⁹⁸ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008, p19609.

⁹⁹ Ibid at 19599.

¹⁰⁰ Performance standards, monitoring requirements and credit release schedules. Session 10. A training course for mitigation banking and in-lieu fee program Interagency Review Teams 2018.

site protection,¹⁰¹ ideally the legal instrument should thus be adapted to the unique requirements of the site. In order to minimise the risk of failure of site protection, it should be confirmed whether the instrument is legally sufficient, enforceable and can be recorded.¹⁰²

The concept of protection/conservation of the land on which the bank is located, could involve various legal mechanisms including, transfer of land title, conservation servitudes, restrictive conditions, multiple party agreements, conservation land use agreements, as well as national and/or provincial and or municipal conservation plans, and legislation, accompanied by changes in land use such as cessation of grazing, cultivation and other incompatible activities, and the regulatory implications thereof,¹⁰³ each with accompanying advantages and disadvantages. Critical to the site protection mechanism and related details thereof is that it must be finalised prior to any credits being released.¹⁰⁴

Financial assurances

Financial assurances in terms of mitigation banks, are insurances that reduces the risk of failure due to circumstances such as bankruptcy or dissolution of the responsible parties, and helps guarantee that the project is constructed and it meets its performance standards.¹⁰⁵ Short-term financial assurances can be released at the end of the operational life of the project, or at the end of a phase, such as construction or meeting a performance criteria.¹⁰⁶ The proposal of the mitigation banker includes conditions for release of short-term assurances, which would then be reviewed and included in the banking permit conditions.¹⁰⁷

It should be noted that there are clear differences between financial assurance and long-term management funding. Financial assurance's function is to provide financial resources after the performance standards have been met and will be used for annual maintenance work in the long-term.¹⁰⁸

¹⁰¹ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008, p19609 (Ref from manual ss CFR 332.7(a)(1)).

¹⁰² Site protection. Session 4. A training course for mitigation banking and in-lieu fee program Interagency Review Teams 2018.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Financial assurance. Session 8. A training course for mitigation banking and in-lieu fee program Interagency Review Teams 2018.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

Long term management/stewardship

The long-term management plans include specifics on long-term management needs, provides annual cost estimates for those needs and describes the preferred funding mechanism to meet these costs.¹⁰⁹ The long-term management funding should be included as a performance milestone for credit release, as well as maintaining the national wetland credit register, which includes the status quo of credit trades, banks and associated information,¹¹⁰ as this is critical for understanding the market. There is an explicit difference between financial assurances and long-term management and monitoring funds, with the latter being long-term and drawn over time.¹¹¹ The financial assurances end after project completion and is phased out when the project has met its performance standards.¹¹² There is a high risk for insolvency and bankruptcy by the payor, with limited options for additional funds, therefore the assumptions made initially in the planning of the long term management will directly affect the fund's likelihood of success.¹¹³ Currently, in South Africa, there is currently no definite responsibility on institutional and financial arrangements for offset sites for when that responsibility ends,¹¹⁴ however in Business and Biodiversity Offsets Programme (BBOP)¹¹⁵ there are definite requirements for the responsibility for offsets to last at least for the duration of residual negative impacts on biodiversity.

3.3.3 Performance standards

Successful enforcement, monitoring and ecological evaluation of the bank tend to remain a great challenge, even after the detail review and subsequent amendment of banks within the USA.^{116, 117} For instance, it became apparent that data collected did not include wetland functions, therefore there was no indication that the mitigation measures did indeed contribute

¹⁰⁹ Long-term management and stewardship funds. Session 12. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹¹⁰ Performance standards, monitoring requirements and credit release. Session 10. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹¹¹ Long-term management and stewardship funds. Session 12. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ S Brownlie, A von Hase, M Botha, J Manuel, Z Balmforth & N Jenner Biodiversity offsets in South Africa – challenges and potential solutions (2017) 35(3) *Impact Assessment and Project Appraisal* 252.

¹¹⁵ Business and Biodiversity Offsets Programme (BBOP) *Standard on Biodiversity Offsets* (2012) Washington DC: Business and Biodiversity Offsets Programme, available at <http://bbop.forest-trends.org/> (accessed 16 September 2018).

¹¹⁶ Performance standards, monitoring requirements and credit release. Session 10. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹¹⁷ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

to the no-net loss policy, hence it was recommended that wetland area and functions lost and regained be tracked in a national database, which should ensure strict quality assurance measures for data entry. This would allow establishment of catchment based organisations for tracking, monitoring and managing wetlands in public ownership or under easement.¹¹⁸

Furthermore, performance expectations in permits have often been unclear, hence compliance has often not been assured nor attained. It was established that at some of the mitigation sites, the compliance criteria were being met, however the hydrological variability which defined the wetland, had not been established correctly or adequately. The compliance criteria sometimes specific plant species that were inappropriate for the specific site conditions.¹¹⁹

3.3.4 Monitoring requirements and adaptive management approach

Hence, to ensure successful implementation and management of the bank, detailed requirements for during development and operation are critical for all parties involved, with clear references and targets defined in order to ensure that the monitoring program provides adequate data to demonstrate that the project is meeting its performance standards.¹²⁰ These ecological performance standards should be observable, measurable and achievable, with an adaptive management approach to adjust the monitoring plan should the bank not be achieving its performance standards.¹²¹ In order to limit performance issues during later years of the bank for instance, additional requirements for early monitoring has been included as part of the adaptive management approach.¹²²

The ultimate goal is that all wetlands should become self-sustaining, which is strongly dependent upon the placement within the landscape to establish the hydrogeological equivalence, and linked to this is the biological dynamics which should be evaluated in terms of the populations present in the reference models in the region and the ecological requirements of those species. Attention should be paid to subsurface conditions, including soil and sediment geochemistry and physics, groundwater quality and quantity and in-faunal communities.

¹¹⁸ Ibid.

¹¹⁹ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

¹²⁰ Performance standards, monitoring requirements and credit release. Session 10. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹²¹ National Research Council. 2001. Compensating for wetland losses under the Clean Water Act.

¹²² Ibid.

Long-term stewardship with periodic monitoring is critical to achieving the offset mitigation goals, which again emphasizes the importance of creating self-sustaining wetlands with manageable long-term costs in order to enable successful offsets.¹²³

The analyses of a model mitigation banking scheme have proven the interrelatedness of various aspects from credits, to administrative management, performance standards and long-term management via monitoring and adaptive management measures. An understanding of these aspects and their relatedness are mandatory prior to the evaluation against the South African legislative framework.

3.4 CONCLUSIONS

Based on the three offset models presented by Koh¹²⁴, the preferred model to follow in South Africa would be the Mandatory Model. This enforces the commitment of the permittee and within the bank review and approval process, includes the ticks and balances for ensuring the long-term management and commitment is effectively executed.

¹²³ Ibid.

¹²⁴ NS Koh, T Hahn & WJ. Boonstra “How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies” (2019) 232 *Journal of Environmental Management* 689

4. CHAPTER 4: SOUTH AFRICAN LEGISLATION AND LEGISLATIVE TOOLS FOR MANAGING WETLAND MITIGATION BANKS

The previous chapter analysed the fundamental principles and goals of what a wetland mitigation bank should achieve. This chapter reviews whether the proposal to implement a wetland mitigation bank is suitable within South Africa's current environmental legislative regime. In order to assess this compatibility, this chapter broadly explores the legislation and legislative tools/frameworks/strategies regulating and guiding the environment in South Africa.

Currently, no laws provide for mitigation banks in South Africa, and as stated, there is not even a formal offsetting regime to provide guidance to the implementation of mitigation banks, however, the laws, principles, policies, frameworks and strategies pertinent to mitigation banking and where relevant, biodiversity offsets in South Africa, will be examined to see if, and how, a mitigation banking proposal would fit into our regime.

Therefore, in this chapter, relevant provisions from the main environmental Acts¹²⁵ and relevant legislative tools, frameworks and strategies are reviewed in terms of the necessities for implementation and management of wetland mitigation banks, based on the analyses done in Chapter 3.

Similarly to Midgley's¹²⁶ recommendation that the South Africa's framework law, policies and information tools are compatible with the concept of a biodiversity offset regime, this Chapter recommends that the framework law is compatible with the wetland mitigation banking concept, and the other related legislative tools, including frameworks and strategies, are aligned in terms of future inclusion of wetland mitigation banks as an option following regulation of biodiversity offsets.

¹²⁵ The NWA, the NEMA, the MPRDA, the National Environmental Management: Waste Act (Act 59 of 2008), the NEMBA, NEMPAA and the National Environmental Management: Air Quality Act (NEMAQA) (Act 39 of 2004).

¹²⁶ D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 76

4.1 LEGISLATIVE REGIME

In South Africa, the niche for biodiversity offsetting¹²⁷ is after application of the mitigation hierarchy. The South African Government is in the process of finalising national biodiversity offsetting legislation,¹²⁸ however some provincial Departments have compiled their own provincial guidelines, with their own specifications.¹²⁹ Due to the current lack of a national policy framework, offsets are being applied based on inconsistent principles inter-provincial and national, leading to only selected projects requiring offset implementation. This lack of a legal, consistent requirement for offsets are causing South Africa to miss out on significant biodiversity benefits¹³⁰ by causing losses in wetlands with no mitigation.

Midgley summarizes the principles for developing offsets as follows:

- The foundational NEMA principles are critical to consider, especially the precautionary approach¹³¹ and prior application of mitigation hierarchy¹³²;
- “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.”¹³³

Midgley’s legal review confirms that conceptually, a biodiversity offset regime is compatible with South African environmental law, however the national regulatory framework requires a formal legislative regime, and not the ad hoc biodiversity offset implementation.¹³⁴ One of the mechanisms for implementing a wetland offset, would be to make use of a wetland mitigation bank. In some instances locally, the EA conditions included for an offset such as the successful

¹²⁷ Definition of biodiversity offset in GN R276 of GG40733, 31/03/2017 include ‘conservation measures designed to remedy the residual negative impacts of development on biodiversity and ecological infrastructure, once the first three groups of measures in the mitigation sequence have been adequately and explicitly considered (i.e. to avoid, minimize and rehabilitate/ restore impacts). Offsets are the ‘last resort’ form of mitigation, only to be implemented if nothing else can mitigate the impact’.

¹²⁸ A draft National Policy Framework for Biodiversity Offsetting was submitted to the Department of Environmental Affairs in 2017 (GN R276 of GG40733, 31/03/2017) but has to date not yet been approved.

¹²⁹ Ezemvelo KZN Wildlife, 2013. Comprehensive Guideline for Biodiversity Offsets: KwaZulu-Natal Province, South Africa.

¹³⁰ D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 77

¹³¹ 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.

¹³² T A. Gardner, A Von Hase, S Brownlie, J M. M. Ekstrom, J D. Pilgrim, C E. Savy, R. T. T Stephens, J Treweek, G T. Ussher, G Ward and K Ten Kate. ‘Biodiversity Offsets and the Challenge of Achieving No Net Loss’. 2013 (2) *Conservation Biology Journal* 1255.

¹³³ D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 77

¹³⁴ Ibid at 79.

30-year management partnership established between Department of Public Works, Cape Nature, and the provincial authority Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), which led to a successful management of an offset through perpetuity use of a stewardship, such as the Blue Downs Erf 1987, City of Cape Town offset,¹³⁵ and another successful example is ESKOM's Ingula offset implementation programme.¹³⁶

The low-cost housing development, Blue Downs Erf 1987¹³⁷ in the Cape Flats Dune Strandveld in Cape Town, was offset for a value of R2million¹³⁸ including a landowner levy per household which will be used to assist with the long-term management of the offset site. The offset site will be an area within the City Strandveld Conservation Implementation Plan, thus contributing to the success of the Implementation Plan by turning the local loss into a residual gain by means of the contribution to City's financial resources for implementing the Implementation Plan.

The ESKOM Pumped Storage Scheme (Ingula)¹³⁹ consists of two dams (upper and lower), which are 4.5kms apart but connected via means of an underground waterway that passes through an underground generating facility of four 333 MW hydro-electric generators. The prerequisite for approving the project, contained as a condition in the EA, was the purchase of two farms downstream from a national important wetland, also located downstream of the planned dams. Additionally, the applicant should ensure water flow to the wetland remain unaffected. Through an implementation partnership between ESKOM, Birdlife South Africa and the Middelburg Wetland Trust, this property will be the cornerstone of a large conservation area, protecting the moist, high grasslands of the eastern Free State and northern KwaZulu-Natal.

Section 3.3 has shown that the real test for successful implementation of a wetland mitigation bank, is integrating a wide spectrum of conventions, laws, policies, strategies and guidelines cross-linking between each other and addressing the various aspects involved in compilation of a mitigation bank. The current national legislation applicable to management of offsets and ultimately mitigation banks in the future, are discussed hereunder:

¹³⁵ Linkd Literature review: Environmental Offsetting (2014) 19.

¹³⁶ J Hlope (2017) 'Ingula: A fine balancing act to achieve sustainability' *National Biodiversity and Business Network* Indaba.

¹³⁷ Linkd Literature review: Environmental Offsetting (2014) 18.

¹³⁸ A conservation calculation specified the financial value in a condition in the Environmental Authorisation

¹³⁹ Linkd Literature review: Environmental Offsetting (2014) 18.

4.1.1 Constitution of South Africa¹⁴⁰

The Constitution is the supreme law of South Africa of which Sections 24(b) and (c) specifies the environmental right which states that everyone has the right to have the environment protected by securing ecologically sustainable development and the use of natural resources. Section 24 b (iii) specifically refers to ‘ecologically sustainable development’ and ‘the use of natural resources while promoting justifiable economic and social development’, which relates directly to the topic of wetland offsets and wetland banking.

This protection of the environment should occur through legislative and other measures which should promote conservation and secure sustainable development, which can relate to biodiversity offsets¹⁴¹ as well as promoting justifiable economic development through implementation of a mitigation banking concept by ensuring no net loss of biodiversity.

4.1.2 NEMA

Section 2(4)(a)¹⁴² of this Act states the NEMA principles in terms of sustainable development for management of ecosystems, development, negative impacts and payment of costs of remedying the environment must be paid by those responsible.¹⁴³ Within the NEMA, the mitigation hierarchy principle is intertwined into the Act, in terms of the context of ecosystem and landscape disturbance, pollution, environmental degradation, waste and any negative environmental impacts.¹⁴⁴ The principle of biodiversity offsets and banking is not mentioned directly in NEMA, however the principles listed above, would have to be considered to be aligned with the NEMA. 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.¹⁴⁵ These principles are also critical in guiding the competent authority’s discretion when deciding on conditions included in an authorisation¹⁴⁶.

NEMA regulates EIA processes,¹⁴⁷ during which the significance level of anticipated impacts is assessed. As stated in Section 3.2.1, in order to adhere to the no-net loss policy, should the

¹⁴⁰ Sections 24(b) and (c) of The Constitution.

¹⁴¹ D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 2.

¹⁴² Section 2(4)(a) of NEMA.

¹⁴³ Section 2(4)(p) of NEMA.

¹⁴⁴ NEMA Sections 2(4)(a)(i)-(iv) and (vii).

¹⁴⁵ NEMA Section 2(4)(a)(i).

¹⁴⁶ D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 33.

¹⁴⁷ GN R276 of GG40733, 31/03/2017.

residual negative impacts be confirmed of medium/high significance after following the mitigation hierarchy, the potential for offsets should be investigated. This NEMA EIA Regulations could therefore contribute significantly to the demand for mitigation within South Africa, however unfortunately it is often perceived that the biodiversity aspects within EIAs are inadequately studied thereby resulting in deficient baseline assessments.¹⁴⁸ Often these results are driven by tight timeframes for the EIA process^{149, 150} and insufficient integration between the various specialists during the impact assessment process. This contributes to offset requirements introduced too late in the EIA process, causing potential loss of impact avoidance and minimization opportunities during the planning phases of the project.¹⁵¹

A valuable recommendation from the KZN Offset Guidelines which is required to be included in Environmental Authorizations (EAs) applicable to offset areas are:

- 'a) that the authorized activity may not commence before specified conditions are complied with (s38(2)(a)) (this provision could ensure that the offset was secured before project activities began);
- b) management, monitoring and reporting of impacts on the environment throughout the life cycle of the activity (s38(1)(d)(ii));
- c) the holder of the authorization to furnish the competent authority with environmental audit reports (s38(2)(c)); and
- d) any other conditions that the competent authority considers necessary for the protection of the environment (s 38(2)(d))'.¹⁵²

However, again to contribute to long-term biodiversity conservation, this should be applied consistently throughout the country, and not ad hoc within a province.

4.1.3 Specific Environmental Management Acts (SEMA)

*National Environmental Management Biodiversity Act (NEMBA)*¹⁵³

The NEMBA relates to offsets and mitigation banks through the commitment of management and conservation of biological diversity within South Africa, and the commitment to ratified

¹⁴⁸ Brownlie S, Walmsley B, Tarr P (2006) *Situation assessment on the integration of biodiversity issues in impact assessment and decision making in Southern Africa*. Windhoek: Southern African Institute of Environmental Assessment and IAIA-CBBIA.

¹⁴⁹ Brownlie et al (2017) 35(3) Biodiversity offsets in South Africa – challenges and potential solutions, *Impact Assessment and Project Appraisal* 251.

¹⁵⁰ Business and Biodiversity Offsets Programme. 2012. *Biodiversity offsets: principles, criteria and indicators*. BBOP. Washington, DC. Available from: <http://bbop.forest-trends.org/pages/guidelines>

¹⁵¹ Ezemvelo KZN Wildlife, 2013. *Comprehensive Guideline for Biodiversity Offsets*: KwaZulu-Natal Province, South Africa.

¹⁵² Ibid.

¹⁵³ Act 10 of 2004. Herein referred to as 'NEMBA'.

international agreements which promotes biodiversity offsets. Section 44 of NEMBA also provides the option for a Biodiversity Management Agreement, which forms part of the stewardship options (See Section 4.2.1). NEMBA is furthermore overall cross-cutting to all strategic objectives (SOs) and outcomes of the National Biodiversity Strategy and Action Plan (NBSAP).¹⁵⁴

Chapter 2 of NEMBA establishes the South African National Biodiversity Institute (SANBI), which as part of their duties evaluate and map the protection status of biodiversity¹⁵⁵ in a scientifically-robust manner through a national biodiversity assessment.¹⁵⁶ As part of these duties, national systematic biodiversity plans map Critical Biodiversity Areas (CBAs), which ‘represent the most efficient configuration in the landscape to protect a region’s biodiversity’,¹⁵⁷ which should be used during decision-making and planning for protected area expansion, by means of highlighting priority conservation areas and indicating ‘offset receiving areas’.¹⁵⁸ These CBAs are one of the pillars for driving the biodiversity offset principles, by triggering an offset when one of the conservation targets for ecosystems below ‘endangered’ status, decreases,¹⁵⁹ or when wetland ecosystems experience a loss in water resources.¹⁶⁰ These conservation areas should play a pivotal role during identification of bank areas.

Section 44 of this Act further also relates to the implementation of Biodiversity Management Areas (BMA) which require a Biodiversity Management Plan (BMP) with a minimum duration of 5 years, and then managed as a conservation area as part of the stewardship options.¹⁶¹ See also further details on stewardship options in Section 4.2.2.

¹⁵⁴ GN1143 of GG41996, 26/10/2018

¹⁵⁵ Section 3 of NEMBA.

¹⁵⁶ Brownlie et al (2017) 35(3) Biodiversity offsets in South Africa – challenges and potential solutions, *Impact Assessment and Project Appraisal* 249.

¹⁵⁷ Ibid.

¹⁵⁸ S Brownlie, D de Villiers, A Driver, N Job, A von Hase & K Maze (2005) 7 *Systematic conservation planning in the cape floristic region and succulent Karoo, South Africa: enabling sound spatial planning and improved environmental assessment*. *J Environ Assess Policy Manage.* 210–228.

¹⁵⁹ Brownlie et al (2017) 35(3) Biodiversity offsets in South Africa – challenges and potential solutions, *Impact Assessment and Project Appraisal* 249.

¹⁶⁰ DM MacFarlane, SD Holness, A von Hase, S Brownlie, JA Dini & V Kilian (2016) *Wetland offsets: a best-practice guideline for South Africa*. South African National Biodiversity Institute and the Department of Water and Sanitation. WRC Report No. TT 660/16 4.

¹⁶¹ GN700 of GG26436, 7/06/2004; s 44.

*National Environmental Management Protected Areas Act (NEMPAA)*¹⁶²

The aim of the NEMPAA is specifically aligned with NBSAP SO1,¹⁶³ which is

‘to provide for the protection and conservation of ecologically viable areas representative of South Africa’s biological diversity and its natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards; for intergovernmental cooperation and public consultation in matters concerning protected areas’

and is therefore perfectly aligned with the goal of mitigation banks. The relevant objectives of NEMPAA includes conservation of biodiversity through the effect of a national system of protected areas in South Africa, and to do this through providing for a diverse and representative network of protected areas on state land, private land, communal land and marine waters.¹⁶⁴ Protection to the land can be given in terms of s 20 (National park), s 23 (Nature Reserve) or s 28 (Protected Environment)¹⁶⁵ in relation to stewardships. This Act also plays a critical role in terms of mitigation banking by ways of the stewardship options.¹⁶⁶ Additional details on stewardship options are included in Section 4.2.2.

The long-term management funds should be legally restricted to the property for which they were extracted, and the purposes as stipulated in the permitting documents.¹⁶⁷ NEMPAA¹⁶⁸ allows for the State to act as a trustee of protected areas and to implement this Act in partnership with the people to achieve the progressive realization of those rights. This implies that the South African legislation provides for mitigation banking.

4.1.4 Other relevant South African legislation

*Conservation of Agricultural Resources Act (CARA)*¹⁶⁹

There is no direct link and/or requirement to the concept offsets or banks within this Act, however it does require protection of soils, wetlands and water resources. This piece of legislation could therefore contribute to the demand for wetland mitigation within South Africa.

¹⁶² Act No 57 of 2003. Herein referred to as ‘NEMPAA.’

¹⁶³ SO1: Management of biodiversity assets and their contribution to the economy, rural development and job creation and social wellbeing is enhanced (NBSAP 2015 – 2025).

¹⁶⁴ Section 2 of the NEMPAA.

¹⁶⁵ Ibid s 28.

¹⁶⁶ Ibid.

¹⁶⁷ Long-term management and stewardship funds. Session 12. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

¹⁶⁸ NEMPAA s 3.

¹⁶⁹ Act 43 of 1983.

*Deeds Registries Act*¹⁷⁰

Section 65 of the Deeds Registries Act allows servitudes to be registered. Distinctions are being made between personal servitudes recorded in notarial deeds and registered against the title deeds of the property (only applicable for lifetime), however this servitude only remains applicable for the lifetime of the person in whose favour the servitude is created and cannot be transferred, and thus to ensure the land is secured the third party would need to be a juristic person. This would then be binding on successors in title to ensure long term protection of the land for offset use.¹⁷¹ Section 75 of the Act specifically relates to praedial servitudes,¹⁷² which allows for registration of servitudes in perpetuity.

Servitudes does however only provide control of land use, but not over management of the land in terms of aspects such as alien clearing and fire management.¹⁷³

*Income Tax Act*¹⁷⁴

The Biodiversity Tax Incentives have been effective as from 1 March 2015, whereas the levels of protection status of the land be awarded deductions in terms of s 37 of the Income Tax Act. The Act allows for deductions in respect of environmental conservation and maintenance¹⁷⁵ or allowances should the land be declared as a Nature Reserve¹⁷⁶ or a National Park in terms of NEMPAA.¹⁷⁷ Section 37B details potential deductions in respect of environmental expenditure, within limits in terms of capital allowance requirements, whereas s 37(C) of the Income Tax Act separates protection of areas in terms of s 44 of NEMBA, or ss 20, 23 or 28 of NEMPAA. This is discussed in more detail under the stewardship options in Section 4.2.2.

¹⁷⁰ Act 47 of 1937 as amended.

¹⁷¹ F. Elliott *Biodiversity Offsets and the EIA Process: The Fairbreeze Mine Conundrum*. (unpublished LLM thesis, University of KwaZulu Natal, 2014) 59.

¹⁷² Defined as 'A praedial servitude is thus a real right entitling one piece of land from receiving the benefit of the right, and the other piece of land being subject to the right. This servitude attaches to the property itself and not to a person and even though a change in ownership may take place, this servitude will continue to exist and can only be cancelled by agreement between the parties.' by <http://www.polity.org.za/article/servitudes---what-how-and-when-2017-07-06>. Accessed on 14 December 2018.

¹⁷³ F. Elliott *Biodiversity Offsets and the EIA Process: The Fairbreeze Mine Conundrum*. (unpublished LLM thesis, University of KwaZulu Natal, 2014) 60.

¹⁷⁴ Act 58 of 1962. Herein referred to as 'Income Tax Act'.

¹⁷⁵ Section 37C(1) of Income Tax Act.

¹⁷⁶ Section 37C(3) of Income Tax Act.

¹⁷⁷ Section 37D of NEMPAA.

Recent changes to the Income Tax Act allow for biodiversity tax incentives¹⁷⁸ for privately and communally owned protected areas. The Kaingo Private Game Reserve, received its first tax incentive¹⁷⁹ based on their commitment to conservation. This Amendment to the Income Tax Act for formally protected areas¹⁸⁰ and Biodiversity Management Areas¹⁸¹ provides tax benefits based on various commitments and expenditures, such as the commitment in terms of the length of the conservation agreements and deduction of expenditure for conservation or maintenance of declared land.¹⁸²

This tax incentive in protected areas is in line with BIOFIN's options specifically for South Africa, and it is estimated to contribute close to 10% of additional funding in the biodiversity finance gap¹⁸³ The Kaingo Private Game Reserve tax incentive¹⁸⁴ has proven a success story, however Van Wyk¹⁸⁵ had the opinion that this tax incentive is insignificant and based on his surveys, landowners would prefer direct 'financial incentives and exemption from property taxes'.¹⁸⁶ He then also provided statistics that only a third of the landowners which participated in his study indicated their willingness to commit more land for conservation based on the tax incentives.¹⁸⁷ Van Wyk¹⁸⁸ furthermore indicated that the use of municipal value in the valuation of land would promote objectiveness and consistency, and in his survey, only a third of the landowners indicated that tax incentives would encourage them to commit more land for conservation.

*Mineral and Petroleum Resources Development Act (MPRDA)*¹⁸⁹

With the 'One Environmental System' in place from December 2016, the Department of Minerals and Resources is now the competent authority for mining applications, and all

¹⁷⁸ Section 37C and S37D of Income Tax Act. Amendment through the Revenue Laws Amendment Act 60 of 2008.

¹⁷⁹ Section 37D of Income Tax Act.

¹⁸⁰ Formally protected in terms of ss 20, 23 or 28 of NEMPAA.

¹⁸¹ BMA in terms of s 44 of NEMBA.

¹⁸² C Stevens (2018) Biodiversity Tax Incentives for South Africa's Protected Area Network. Accessed at <https://panorama.solutions/en/solution/biodiversity-tax-incentives-south-africas-protected-area-network>, November 2018.

¹⁸³ Ibid

¹⁸⁴ Ibid.

¹⁸⁵ E Van Wyk (2010) *Tax incentives for biodiversity conservation in the Western Cape* (18) 1 *Meditari Accountancy Research* 73.

¹⁸⁶ Ibid at 58.

¹⁸⁷ E Van Wyk (2010) 18(1) *Tax incentives for biodiversity conservation in the Western Cape*. *Meditari Accountancy Research* 73.

¹⁸⁸ Ibid at 58.

¹⁸⁹ Act 29 of 2008.

applicable assessment process should be followed as per the NEMA Regulations. The MPRDA¹⁹⁰ would then be applicable to increasing the wetland mitigation banking market similar to the EIA Regulations as discussed in Section 4.1.2.

National Forest Act (NFA)¹⁹¹

The loss of protected trees¹⁹² and indigenous forests¹⁹³ could require an offset (like for like or better), specifically when dealing with specific vegetation types which contribute to CBAs.¹⁹⁴ Therefore, the NFA could contribute to the demand for mitigation within South Africa.

National Water Act

The NWA focusses on water resources, and specifically the use, development, management, conservation and protection thereof, with the primary focus of the NWA being to focus on water resource quality characteristics.¹⁹⁵ The drivers of water resources include flow regime, water quality/physico-chemical and geomorphological and the responses to the drivers include habitat created by flow-sediment and biodiversity.¹⁹⁶ As per s 21 of this Act, a Water Use License (WUL) is required should the watercourse¹⁹⁷ be impeded or diverted¹⁹⁸ or the beds, banks, course or characteristics of a watercourse be altered.¹⁹⁹ A license to impact on the water uses may be issued with a wetland offset requirement, which will then contribute to the permit conditions demanding wetland mitigation within South Africa.

The NBSAP SO2 and the National Government Department: Planning, Monitoring and Evaluation's Medium-term Strategic Framework (MTSF)²⁰⁰ Outcome 10, Output 1, is aimed at enhancing the water quality and quantity of water resources through 'protection of

¹⁹⁰ Act 28 of 2002.

¹⁹¹ Act 84 of 1998. Herein referred to as the 'NFA'.

¹⁹² Section 10(1) of NFA.

¹⁹³ As per definition in Sections 2(1)(x) and s 2(1)(xx) of NFA.

¹⁹⁴ CBA are discussed in detail in: Driver A, Sink KJ, Nel JN, Holness S, Van Niekerk L, Daniels F, Jonas Z, Majiedt PA, Harris L, Maze K (2012) *National biodiversity assessment 2011: an assessment of South Africa's biodiversity and ecosystems*. Synthesis report. Pretoria: South African National Biodiversity Institute and Department of Environmental Affairs.

¹⁹⁵ Part 8 of the NWA.

¹⁹⁶ Ibid.

¹⁹⁷ Section 1 of the NWA. Definition of a watercourse as per the NWA is '(a) a spring; (b) a natural channel in which water flows regularly or intermittently; (c) a wetland, lake or dam into which, or from which, water flows; and (d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks'.

¹⁹⁸ Section 21(c) of NWA.

¹⁹⁹ Section 21(i) of NWA.

²⁰⁰ Medium-Term Strategic Framework (MTSF) 2014-2019. South African National Government. Department: Planning, Monitoring and Evaluation.

groundwater reserves and wetlands, preventing loss of wetlands, and increasing the number of wetland and river ecosystems that are restored to health'.²⁰¹

*Promotion of Administrative Justice Act*²⁰²

This Act could be applied to enforcing administrative actions for proactive strategies for offset receiving areas being catered for in policy.

*Public Finance Management Act (PMFA)*²⁰³

The Western Cape Guideline on Biodiversity Offsets²⁰⁴ provides guidance in terms of the options for funding as per the PMFA:

- **‘Endowment Fund:** The biodiversity offset is financed through the income generated annually from a proportion of the annual growth of capital invested in a ring-fenced fund.
- **Revolving Fund:** Regular or periodic contributions are required to augment the original capital.
- **Sinking Fund:** This fund has a finite, pre-determined life span. It is a fixed period investment and the entire capital and investment income is disbursed over a predetermined period of time. ‘

In terms of accepting donations such as land, or financial transfers to a conservation organisation or the State, no organ of state is currently mandated to implement biodiversity offsets,²⁰⁵ and the PFMA dictates that money transferred to a Department cannot be withdrawn as a direct charge against the Revenue Fund. Furthermore, all money received by an organ of state must be paid into the Revenue Fund,²⁰⁶ except if the money is received for a specific purpose, which then should be held separately in trusts.²⁰⁷ Therefore, Department of Environmental Affairs would need to establish separate trusts per offset and manage them accordingly, which is a tremendous admin burden on the State employees.

However, an opportunity exists for money being transferred to a conservation authority, should the founding statutes of the conservation authority have a mandate to implement a biodiversity offset and therefore empower the establishment of a trust to manage the offset. This

²⁰¹ SO2: Investments in ecological infrastructure enhance resilience and ensure benefits to society (NBSAP 2015 – 2025).

²⁰² Act 3 of 2000.

²⁰³ Act 1 of 1999. Herein referred to as ‘PMFA’.

²⁰⁴ DEA&DP 2015. Western Cape Guideline on Biodiversity Offsets. Prepared by S Brownlie and M Botha for DEA&DP, Cape Town.

²⁰⁵ Sections 15(1)(a)(ii) and 24(1)(a)(ii) of PMFA.

²⁰⁶ Sections 11 and 26 of PMFA.

²⁰⁷ R14.3 of Treasury Regulations for departments, trading entities, constitutional institutions and public entities in GN255 in GG 27388, 15/03/2005, as amended.

conservation authority would then take responsibility for management of expenditures from the trust fund.

A similar approach can be followed in terms of a public benefit organisation (PBO) or trust²⁰⁸ to manage the offset funds,²⁰⁹ should the founding documents of the PBO reflect acceptance of a biodiversity offset responsibility.

*Restitution of Land Rights Act*²¹⁰

The DRDLR requires that a land claim is *Gazetted*²¹¹ once the Commission has confirmed that the claim has been lodged correctly, that the claimants are entitled to restitution (as set in s 2 of this Act), and that the claim is not frivolous or vexatious. These land claim aspects are critical in consideration of the requirements as per the analysis of a model wetland mitigation bank in Section 3.3.2.

*Spatial Planning and Land Use Management Act*²¹²

The Spatial Planning Land Use Management Act (SPLUMA) manages conservation by means of land use zoning which provides protection from land use changes. In some provinces such as the Western Cape, the Land use Planning Ordinance²¹³ and proposed Standard Draft Zoning Scheme By-Law²¹⁴ requires that no rezoning from agriculture to Open Space III of Open Space IV (conservation) occurs without a stewardship agreement.

*Sub-division of Agricultural Land Act*²¹⁵

Should the land in consideration for offset or conservation servitude require rezoning from productive agricultural land, it could lead to a loss in agricultural productive land. This Act would then be applicable in terms of the rezoning application.

*Trust Property Control Act*²¹⁶

The Trust Property Control Act provides for setting up a land trust, where ownership of the land would be vested in the Trust. This trust would then manage and control the land in terms

²⁰⁸ In terms of the Trust Property Control Act No 57 of 1988.

²⁰⁹ Section 13(i)(b) & s 22(1)(b) of PFMA.

²¹⁰ Act 22 of 1994.

²¹¹ Section 17 (c) of Act 3 of 1996.

²¹² Act 16 of 2013.

²¹³ PG6888 of 29 June 2011.

²¹⁴ PG7391 of 18 May 2015.

²¹⁵ Act 70 of 1970.

²¹⁶ Act 57 of 1988.

of the biodiversity requirements and title deeds. The deeds would include details of the trust such as purpose, nature, duties of trustees and general operational matters. Elliott motivates that trusts are the best mechanisms for enforcement of offsets within EA conditions.²¹⁷

4.1.5 One Environmental System

Following an agreement between the Ministers responsible for Environmental Affairs, Water and Sanitation, and Mineral Resources, amendments have been made to the MPRDA, the National Environmental Management: Air Quality Act²¹⁸ (NEMAQA), NEMA, the NWA²¹⁹, and the National Environmental Management: Waste Act²²⁰ (NEMWA) to give effect to ‘One Environmental System’ for South Africa.²²¹ Even though this ‘One Environmental System’ has supposedly been implemented since 2014, the lack of National Offset Regulations to effectively advise on offsets, still causes implementation of different provincial offset processes in terms of appropriateness of offsets adequacy and provisions for implementation.²²² This legislative concept is ideally aligned for being key in creating the demand for mitigation within South Africa.

This section provided an overview of the relevant provisions from the main environmental Acts in terms of applicability to implementation and management of wetland mitigation banks, based on the wetland banking model analyses presented in Chapter 3.3. Following this assessment of the Acts, is a review of the legislative tools/frameworks which is contributing to the offset and wetland mitigation banking regime.

4.2 POLICY TOOLS/Frameworks

South Africa has numerous frameworks/strategies and other tools which guides the various Departments into service delivery and optimal planning. Section 38 of the NEMBA regulates biodiversity through the National Biodiversity Framework (NBF).²²³ The NBF focus 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

²¹⁷ F. Elliott, *Biodiversity Offsets and the EIA Process: The Fairbreeze Mine Conundrum*. (unpublished LLM thesis, University of KwaZulu Natal, 2014) 64.

²¹⁸ Act 39 of 2004.

²¹⁹ Act 36 of 1998.

²²⁰ Act 59 of 2008.

²²¹ GN324 to 327, GG40772, 7/04/2017.

²²² S Brownlie, A von Hase, M Botha, J Manuel, Z Balmforth & N Jenner (2017) 35(3) Biodiversity offsets in South Africa – challenges and potential solutions *Impact Assessment and Project Appraisal* 254.

²²³ GN813 of GG32474, 3/08/2009.

organs of state whose mandates impact directly on biodiversity conservation and management’,²²⁴ making it an ideal starting position for including the offset banking concept.

Even though there has been no formal adoption of the offset concept in regulatory legislation, it has been accepted by various scientific groups that there is a need for this form of mitigation. Furthermore, a ‘comprehensive set of tools operating within an integrated manner within the various land uses, including protection, restoration and production, guided by progressive legislation and a range of programmes and approaches exist’²²⁵ in South Africa, that can support the concept of offset and mitigation banking by ‘including biodiversity into mainstreaming biodiversity into land-use planning and decision-making, resource management and biodiversity stewardship’.²²⁶ The strategies, frameworks and systems guiding work currently in the biodiversity sector are described in the Draft NBF²²⁷ included the National Biodiversity Strategy and Action Plan (NBSAP)²²⁸ and the National Spatial Biodiversity Assessment (NSBA)²²⁹ which provided valuable information of the status of ecosystems in South Africa, and has subsequently been reviewed in terms of its applicability and potential linkage to mitigation banking within this Section. The updated draft NBF was published in October 2018 and provides insight into the current status quo of the NBSAP and new initiatives.²³⁰

4.2.1 The National Development Plan (NDP)²³¹

The National Planning Commission was appointed in May 2010 by the then President to draft a national development plan. This NDP for 2030 clearly sets the goal for biodiversity offsets in South Africa by confirming that

“Market and policy failures have resulted in the global economy entering a period of "ecological deficit", as natural capital (ground water, marine life, terrestrial biodiversity, crop land and grazing) is being

²²⁴ DEA&DP (2011) Information Document on Biodiversity Offsets, EIA Guideline and Information Document Series 10 10.

²²⁵ SANBI (2014). A Framework for investing in ecological infrastructure in South Africa. South African National Biodiversity Institute, Pretoria 11 11.

²²⁶ Ibid.

²²⁷ GNR813 of GG32474, 3/08/2009.

²²⁸ Government of South Africa, 2015. National Biodiversity Strategy and Action Plan, Department of Environmental Affairs, Pretoria.

²²⁹ Government of South Africa, 2015. National Spatial Biodiversity Assessment, Department of Environmental Affairs, Pretoria.

²³⁰ GNR1143 of GG41996, 26/10/2018.

²³¹ National Planning Commission (2011) National Development Plan 2030 – Our future, make it work. Pretoria: Government Printer.

degraded, destroyed, or depleted faster than it can be replenished. Waste and carbon-equivalent emissions per capita are climbing faster every year in an ecosystem with finite limits.”²³²

Following on this commitment, it is stated that the country needs to ‘protect the natural environment in all respects, leaving subsequent generations with at least an endowment of at least equal value’²³³, with further inclusion of specific requirements for offset,

“the National Planning Commission ... propose three measures to protect the country’s natural resources: (i) An environmental management framework (EMF). Developments that have serious environmental or social effects need to be offset by support for improvements in related areas; ...”²³⁴

The NDP embraces environmental sustainability and resilience, and the above commitments are reflected in their Medium-Term Strategic Framework (MTSF), with one of the focus areas addressing natural resource degradation and depletion of ecological infrastructure. The MTSF furthermore proposes that the EMF be put in place to ensure that long term needs are addressed and unavoidable environmental losses are offset by investments in related areas. The EMF will also be aimed at protecting wetlands for protection of water resources to ensure water security and healthy catchments²³⁵.

4.2.2 Biodiversity Stewardships²³⁶

The stewardship model has had success in South Africa, as it purely depends on the driving force of the implementation bodies, such as Birdlife South Africa and the SANBI for the Department of Environmental Affairs (DEA). This concept has been recognised as a key strategy for implementing the Presidential Delivery Agreement Outcomes 7 and 10.²³⁷ The aim of the biodiversity stewardship programme is to conserve and manage biodiversity by securing land in biodiversity priority areas through entering into voluntary agreements with landowners (private and community) led by conservation authorities by means of formal protection, management and restoration of terrestrial and aquatic ecosystems.²³⁸ The range of biodiversity stewardship agreements include a non-binding agreement by means of a Biodiversity Partnership to more stringent commitments of a Nature Reserve.²³⁹ The legislative

²³² Ibid at 90.

²³³ Ibid at 48.

²³⁴ Ibid.

²³⁵ National Plan for Advancing Environmental-Economic Accounting for South Africa (2015). Version 4, 6

²³⁶ SANBI (2017) *The Business case for biodiversity stewardship. A report produced for the Department of Environmental Affairs.*

²³⁷ Presidential Delivery Agreement.

²³⁸ GNR1143 of GG41996, 26/10/2018; 48.

²³⁹ Ibid 4.

management tools for each type of agreement is considered in context of legislative requirements for implementation of mitigation banking. The Biodiversity Stewardship Technical Working Group (BSTWG)²⁴⁰ (convened by SANBI) support stewardships at the enabling level by means of providing technical and policy tools. SANBI furthermore also provides direct support to provincial conservation authorities during implementation.²⁴¹

The BSTWG consists of members of DEA, provincial conservation authorities, SANBI and key NGOs that contribute to biodiversity stewardship, such as Birdlife.²⁴² The Land Reform Biodiversity Stewardship Initiative (LRBSI) includes founding members of the national Department of Rural Development and Land Reform (DRDLR) in terms of engaging with community landowners in biodiversity stewardships. LRBSI is a conservation and developmental initiative run in a tri-partnership by DEA, DRDLR and SANBI.²⁴³ This programme demonstrates how social, economic and environmental sectors can successfully co-exist as it seeks to remedy the historical injustices underpinned by discriminatory land legislation that fractured communities, destroyed relationships of communities with their land, and created conflict between conservationists and local communities. The primary focus of this programme is to establish a network of learning and community of practice regarding land reform/communal lands and biodiversity stewardship between the land and conservation sectors across the country, and to demonstrate the successful delivery of both socio-economic and conservation benefits affecting the land reform beneficiaries in order to create an opportunity for better land management and sustainable economic development.²⁴⁴

By 2015,²⁴⁵ provincial biodiversity stewardship programmes had secured just over 540 000 ha through the creation of 94 protected areas with long-term security, and a further 400 000ha are currently in the process of being declared according to DEA's Protected and Conservation Areas (PACA) Database. Good examples include the Somkhande and Nambiti Nature

²⁴⁰ SANBI. *The Business case for biodiversity stewardship. A report produced for the Department of Environmental Affairs.* 2017, 6.

²⁴¹ Ibid 5.

²⁴² Ibid 6.

²⁴³ Ibid.

²⁴⁴ Ibid v.

²⁴⁵ The DEA Business Case for Biodiversity Stewardship report was finalised by 2015, even though it was only published in 2017.

Reserves²⁴⁶ in KZN. It was recommended that this community of biodiversity stewardship be expanded from only currently operating in some provinces, to a national-level community.²⁴⁷

The Biodiversity Stewardship programme has no legal requirement for public review and it is done in relative isolation in terms of an overarching, integrated project review team from all government related bodies as well as other directly involved Interested and Affected Parties (I&APs) such as local municipalities and neighbours. This, as well as the lack of advertising and notification of details of stewardship and a lack of an open database with all information relating to stewardship sites, causes the stewardship programme to be conducted in relative isolation, and therefore potentially misses an opportunity for offset permittees in the catchment to contribute to the stewardship programmes. This is further discussed in Section 5.1.5.

4.2.3 Biodiversity Finance Plan (BIOFIN)²⁴⁸

The NBF²⁴⁹ includes detail on the BIOFIN, and South Africa is one of the 36 countries worldwide who has committed to BIOFIN.^{250, 251, 252} It is a process to lead an international paradigm shift, where ‘finance solutions are designed to trigger long-lasting positive changes to the environmental, social, and economic systems dependent upon nature’.²⁵³ This programme is an integrated approach which seeks to obtain support from various stakeholders in the finance and environmental fields (ministers of finance and environment, corporates and NGOs) in order to identify and mobilize the necessary mechanisms, policies, resources and institutional capacities, to implement realistic biodiversity finance solutions.²⁵⁴ These solutions need to be politically feasible, financially sound and integrated within the wider sustainable development goals.²⁵⁵

²⁴⁶ G Martindale (2017) BDS on land reform sites. 2nd annual Biodiversity stewardship conference.

²⁴⁷ Ibid at 219.

²⁴⁸ ‘The Biodiversity Finance Initiative’ available at <https://www.biodiversityfinance.net/>, accessed on 18 January 2019.

²⁴⁹ GNR1143 of GG41996, 26/10/2018; 60.

²⁵⁰ ‘The Biodiversity Finance Initiative - History’ available at <http://www.biodiversityfinance.org/index.php/history>, accessed on 18 January 2019.

²⁵¹ ‘The Biodiversity Finance Initiative’ available at <https://www.biodiversityfinance.net/>, accessed on 18 January 2019.

²⁵² BIOFIN in South Africa is implemented through the national DEA office, and is being supported by the UNDP Country Office, the SANBI, South African National Parks, National Treasury and Statistics South Africa.

²⁵³ UNDP (2018). *The 2018 BIOFIN Workbook: Finance for Nature*. The Biodiversity Finance Initiative. United Nations Development Programme: New York 3.

²⁵⁴ BIOFIN in South Africa is implemented through the national DEA office, and is being supported by the UNDP Country Office, the SANBI, South African National Parks, National Treasury and Statistics South Africa.

²⁵⁵ BIOFIN in South Africa is implemented through the national DEA office, and is being supported by the UNDP Country Office, the SANBI, South African National Parks, National Treasury and Statistics South Africa.

The assessment procedure to develop a country specific biodiversity finance plan to mobilize the resources and policies includes:

- 1) an assessment of the current context for biodiversity finance,
- 2) mapping of existing finance solutions,
- 3) measurement of current biodiversity expenditures from all sectors (public, private, NGOs and donors), and
- 4) making a reliable estimate of the finance need to achieve the country’s biodiversity goals in comparison to current biodiversity expenditures.²⁵⁶

An assessment procedure was followed in South Africa, and three main areas were identified, namely – protected areas, ecosystem restoration and sustainable utilisation of biodiversity²⁵⁷ – which are aligned with the identified wetland mitigation banking legislation requirement. In order to advance within these three areas, the assessment procedure have identified five national biodiversity finance commitments, (Table 4.1), which are all currently awaiting ministerial approval.²⁵⁸ Positive outcomes from these recommendations, will boost the overall planning and functionality of wetland mitigation banking in South Africa.

Table 4.1. Biodiversity finance review outcomes

Description of biodiversity finance commitments	Review/recommendations
Policy and Institutional Review	Review of the policy and practice drivers of biodiversity and ecosystem change, and the analysis of the key actors and institutions, and their relationship to biodiversity drivers and biodiversity finance.
Expenditure Review	Review of public sector (all three spheres of Government) and private expenditure in terms of biodiversity.
Needs assessment	This assessment included a cost estimate for the NBSAP (See details in Section 4.2.1), and based thereon to estimate the biodiversity finance gap. The major areas needing finance solutions were ‘ecosystem restoration and protected area expansion and management’. ²⁵⁹
Finance Plan	Fifteen finance solutions which collectively aim to address the three main areas of work locally were identified.
Finance Solutions	Finance solutions includes ‘developing communication material around the role of biodiversity in supporting the SDGs, improving tax incentives for biodiversity stewardship, the development of a national biodiversity offsets policy, developing guidelines for biodiversity stewardship, and initial work on a wildlife ranching certification system’. ²⁶⁰

²⁵⁵ ‘The Biodiversity Finance Initiative - History’ available at <http://www.biodiversityfinance.org/index.php/history>, accessed on 18 January 2019.

²⁵⁶ UNDP (2018). *The 2018 BIOFIN Workbook: Finance for Nature*. The Biodiversity Finance Initiative. United Nations Development Programme: New York. p vii.

²⁵⁷ ‘The Biodiversity Finance Initiative’ available at <https://www.biodiversityfinance.net/>, accessed on 18 January 2019.

²⁵⁸ Ibid.

²⁵⁹ Ibid.

²⁶⁰ <http://www.biodiversityfinance.org/south-africa>.

Figure 4-1 below indicates the relevance of biodiversity offsets within the 15 biodiversity finance solutions proposed in the BIOFIN for South Africa, built on the existing biodiversity stewardship principles.²⁶¹ Several of these biodiversity finance solutions can be supported by a wetland mitigation banking solution, and should be included in further reviews of the South African BIOFIN.

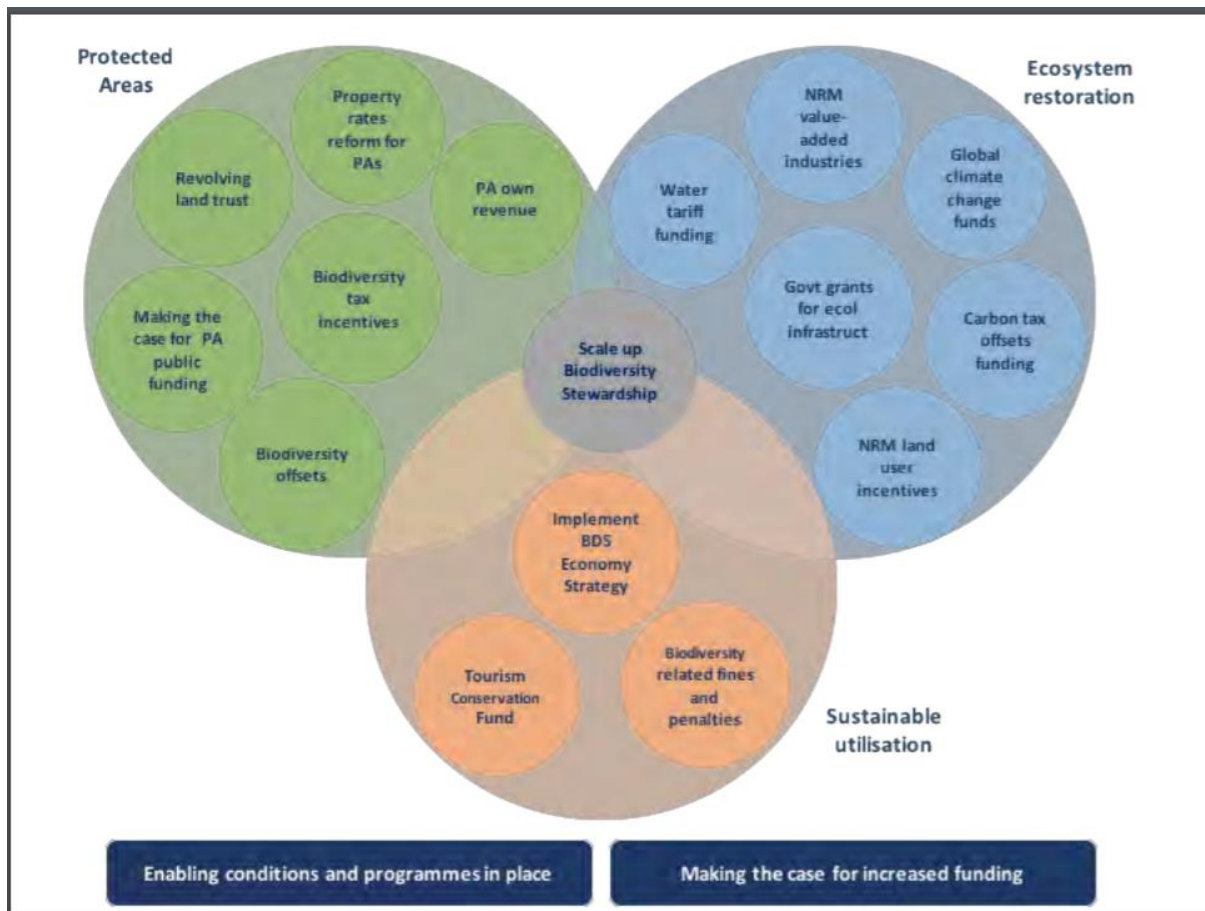


Figure 4-1. BIOFIN for South Africa (Extracted from The South African Biodiversity Finance Plan)²⁶²

Detail planning in terms of BIOFIN in South Africa were presented during the BIOFIN stewardship conference in October 2018 by DEA.²⁶³ It included principles which aligned with the NBSAP and stewardship approaches as discussed in this dissertation.

²⁶¹ https://www.environment.gov.za/sites/default/files/docs/biofin_southafrican_biodiversityfinanceplan.pdf.

²⁶² https://www.environment.gov.za/sites/default/files/docs/biofin_southafrican_biodiversityfinanceplan.pdf.

²⁶³ <http://biodiversityadvisor.sanbi.org/wp-content/uploads/2018/11/BIOFIN-BDS-Conference-2018-Flora-Mokgohloa.pdf>

4.2.4 The National Protected Areas Expansion Strategy 2016²⁶⁴

This 20-year expansion strategy was initially implemented in 2008 to achieve an improvement in expansion of protected areas, and sets protection areas expansion targets for ecosystems on a national level by means of maps of priority areas for expansion, identifying gaps and providing recommended mechanisms for achieving these targets.²⁶⁵ Although it is a national strategy, detail spatial planning and roll-out is being implemented at a provincial level through implementation of provincial protected areas expansion strategies and biodiversity plans. This policy as well as the buffer zone strategy for National Parks, are closely linked to motivate and support creation of offset areas in perpetuity by means of changing current land uses in buffer zones to protected areas by adding restrictive conditions in terms of land use.

This strategy acknowledges the financing challenges in terms of expansion of protected areas networks, and therefore supports alternative mechanisms for purchasing land for increasing protected areas by promoting stewardships and confirms that identified protected area expansion areas should be the ‘major receiving sites for offsets, rather than ad hoc and individually identified sites’.²⁶⁶ This strategy furthermore confirms that the management of offsets should be carefully planned to not create additional burdens, such as ongoing financial management costs, on protected area agencies.²⁶⁷ The proposal in this strategy was therefore to stimulate innovative financial mechanisms for protected area expansions based on various financing options such as payments for ecosystem services and conservation trust funds.²⁶⁸

4.2.5 The Buffer Zone Strategy for National Parks²⁶⁹

This strategy promotes integration of National parks into the surrounding landscape for the benefit of the communities living adjacent to the parks by also improving the conservation/protection of the attributes and functions of the national parks.²⁷⁰ The goals of this Strategy are to identify the kinds of areas that should be included in these buffer zone, and mechanisms for inclusion, incentivizing sustainable land use practices and identifying suitable and unsuitable land uses in the buffer zones.²⁷¹ As discussed above, this buffer zone strategy is

²⁶⁴ Department of Environmental Affairs (2016) *National Protected Areas Expansion Strategy for South Africa 2016*. Department of Environmental Affairs, Pretoria, South Africa.

²⁶⁵ Ibid vii.

²⁶⁶ Ibid xiii.

²⁶⁷ Ibid.

²⁶⁸ Ibid xiv.

²⁶⁹ GN106 of GG35020, 8/02/2012.

²⁷⁰ GN106 of GG35020, 8/02/2012 6.

²⁷¹ Ibid 10.

critical for ensuring protection of functions within the National park, and places restrictions on the permitted land uses within these buffer zones.

4.2.6 The National Biodiversity Economy Strategy²⁷²

This 14-year framework strategy is cross-linked with various other national strategies, including the Strategy for investing in Ecological Infrastructure, Framework for investment in Environment and Natural Resource Management for a Green Economy, the BIOFIN plan (Section 4.2.3), the National Plant Conservation Strategy, the National MAB Strategy and the People and Parks Co-Management Framework. However, this Strategy is mainly focussed at guidance in terms of sustainable growth and transformation of wildlife and bioprospecting industries²⁷³, with limited potential for linking it to wetland mitigation banks.

4.2.7 Framework for investing in Ecological Infrastructure²⁷⁴

Ecological infrastructure²⁷⁵ refers to investment into natural ecosystems,²⁷⁶ and is closely linked to offsets, as investing in ecological infrastructure could be a permit or license condition. These conditions could be an offset, or implementation of mitigation measures and rehabilitation commitments, and would rely on regulatory compliance, either by self-regulation or government-imposed regulation. One of the main motivators for private sector involvement in ecological infrastructure, is risk management. Two examples provided in this framework as private sector investing in ecological infrastructure, is insurance companies aiming to reduce their risk of flood, and for instance an industry sector being reliant on clean water, and therefore investing in services critical for such supplies.²⁷⁷ This indirectly improves the livelihood of the community and addresses poverty and socio-economic disparities.²⁷⁸

²⁷² The National Biodiversity Economy Strategy, 2017.

²⁷³ Ibid ii.

²⁷⁴ SANBI (2014). A Framework for investing in ecological infrastructure in South Africa. South African National Biodiversity Institute, Pretoria.

²⁷⁵ Ecological infrastructure is similar, but not equivalent to, green infrastructure. Ecological infrastructure refers only to natural ecosystems, while green infrastructure also includes infrastructure built to mimic natural ecosystems (such as artificial wetlands), as well as rangelands and other agro-ecological systems that retain some natural functioning. (SANBI, 2016).

²⁷⁶ SANBI, 2016. Lexicon of Biodiversity Planning in South Africa. Beta Version, June 2016 18.

²⁷⁷ SANBI (2014). A Framework for investing in ecological infrastructure in South Africa 2.

²⁷⁸ Ibid 5.

The landowner and land user may provide buy-in and support investment in ecological infrastructure either also through enforcement of existing land use regulations, or contractual agreements and financial support through i.e. biodiversity stewardship.²⁷⁹

This framework therefore provides backbone for supporting a mitigation bank to fulfil the permit conditions, whether by means of a landowner or a private investor.

4.2.8 A Framework for investment in Environmental and Natural Resource Management (ENRM) for a Green Economy²⁸⁰

The Council for Scientific and Industrial Research (CSIR) study on ENRM for a green economy included numerous aspects valuable in terms of enhancing a green economy in South Africa, however for this dissertation, only relevant aspects in terms of mobilizing private and public sector funding, as well as creating the PES market in the green economy has been included.

In order to commit public and private sector funding, Turpie et al²⁸¹ has grouped inter-related mechanisms to enable private sector investment into five main groups:

- ‘Introducing legislation for mandatory payments;
- Creating markets for voluntary PES;
- Reducing the risks to private sector investment;
- Providing financial instruments for investment; and
- Communicating the ‘business case’ for private sector investment in ecological infrastructure.’

DEA&DP²⁸² also views offsets and mitigation banks as one of the mandatory payments which could be implemented through additional legislation. PES and PES-related projects are being implemented on a limited scale in South Africa, mainly due to the many uncertainties within the value chain of ecosystem services that create risks which discourages the market.²⁸³ The

²⁷⁹ Ibid 8.

²⁸⁰ M Audouin, W de Lange, B de Wet, M Murambadoro (2016) *A Framework for Investment in the Environmental and Natural Resources (ENRM)-Green Economy Domain* (CSIR)

²⁸¹ J Turpie, A Mills, T Kong & C Tacon (2014) *A Preliminary Assessment of Priorities and Opportunities for Mobilising Private Sector Investment in the Western Cape’s Natural Capital*; Report prepared by Anchor Environmental and C4 EcoSolutions for the Eco-Invest Initiatives (Phase 1) of the Western Cape Department of Environmental Affairs and Development Planning cited in ‘Michelle Audouin, Willem de Lange, Benita de Wet, Miriam Murambadoro (2016) *A Framework For Investment In Environmental And Natural Resources For A Green Economy* (CSIR)’ 10.

²⁸² Department of Environmental Affairs and Development Planning (DEA&DP) (2007) Department of Environmental Affairs and the Green Fund (2013) *Green Fund: Investment Strategy*; unpublished Report 7.

²⁸³ J Blignaut (2012) *Mobilising private sector investment into ecosystem services: Report for the Development Bank of Southern Africa*; Beatus Advisory services 9.

various PES markets require different legal backing in order to reduce transaction costs and thereby creating a market,²⁸⁴ and without this, the risk would be too high for the private sector to invest in PES and PES-related projects. Often the ENRM projects are relatively small, with high transaction costs, which adds to the risks for investors, however should the value of combined green economy projects be recognised, this risk may be reduced.²⁸⁵ The Green Fund could contribute at the early phases of these projects by de-risking opportunities in order for other funders, e.g. venture capital, private equity funders) to become interested.

These options relate to wetland mitigation banking however, it would be a new field to financially support within South Africa, and the combination of the high risk due to unquantifiable risks and lack of detailed analysis will make it unattractive by most traditional funders such as those in private equity and venture capital.²⁸⁶ It is encouraging to note that one of the three main funding windows for the Green Fund is ‘Natural Resource Management projects including biodiversity and ecosystem services management’,²⁸⁷ therefore options for investing in risk assessments for funding options for mitigation banks within the South African operations, should be promoted within this funding option.

4.2.9 The Biodiversity Sector Climate Change Response Strategy

This Strategy outlines principles and key elements of the biodiversity sector response to risks posed by climate change. The strategy identifies three strategic directions of which one is to protect the natural capital (specifically CBAs, ESAs and FEPAs intact and to restore the degraded sites and increasing the extent of the protected areas).²⁸⁸ This relates to the development of mitigation banks by the proposed offset legislation, integrated with the increase in protected areas.

4.2.10 National Biodiversity Research and Evidence Strategy

This strategy is pivotal by ensuring that research and evidence provides appropriate and sufficient support for development of sufficient policies in the biodiversity sector. Several

²⁸⁴ Ibid 7.

²⁸⁵ C Barby & J Gan (2014) *Shifting the Lens: A De-risking Tool for Impact Investment*; Bridges Ventures and Bank of America Merrill Lynch 22.

²⁸⁶ DEA&DP (2007) Department of Environmental Affairs and the Green Fund (2013) Green Fund: Investment Strategy 7.

²⁸⁷ <http://www.sagreenfund.org.za/wordpress/green-fund-receives-r109-billion-worth-of-project-applications-2/>, accessed on 2 December 2018

²⁸⁸ DEA *The Biodiversity Sector Climate Change Response Strategy* (2014) Available at <http://biodiversityadvisor.sanbi.org/> accessed on 2 December 2018.

aspects of this policy are critical in the background planning for successful implementation of biodiversity offsets and related mitigation banks, e.g. priorities for development of green economy, identification of trade-offs between conservation and development, and also identifying drivers of behavioral change.²⁸⁹

4.3 WAY FORWARD WITH SOUTH AFRICAN LEGISLATION

Various Acts and regulations within South Africa could facilitate the development and implementation of offsets and wetland mitigation banking. Of key importance is the value of NEMA setting the scene for enforcing sustainable development principles in South Africa. The national frameworks and strategies as describe above in this Chapter, contributes to the implementation of the Constitution and NEMA.

There are definite challenges to successful co-ordination and implementation of these offset and mitigation banking applicable legislation and legislative tools to facilitate coherence and effective implementation of such an intricate model as what wetland mitigation banking would require. However, with adequate support from international successful models adapted with local knowledge, the basic legal tools are in place for successful implementation of a wetland mitigation banking Mandatory Model.

²⁸⁹ DEA *The National Biodiversity Research and Evidence Strategy* (2015) available at: <http://biodiversityadvisor.sanbi.org/> and www.environment.org.za/documents/strategicdocuments accessed on 2 December 2018.

5. CHAPTER 5: IMPLEMENTATION CHALLENGES OF WETLAND MITIGATION BANKING IN SOUTH AFRICA

Following the analysis of the legislation and legislative tools in the previous chapter, this section analyses the expected challenges to be encumbered whilst planning for and implementing a national wetland mitigation banking model. Even though challenges have been identified, the opinion remains that the wetland mitigation banking concept should be adapted to local conditions, tried and tested, and then improved with time.²⁹⁰

5.1 CHALLENGES OF IMPLEMENTING WETLAND MITIGATION BANKS

In 2017, two articles were published specifically highlighting the challenges South Africa faces with implementing offsets.^{291, 292} These challenges have been used as a basis for evaluating the encounters expected to be faced when implementing wetland mitigation banks.

Lukey et al²⁹³ identified challenges from a government perspective which needs to be overcome prior to successful offset implementation:

- Theory related barriers: Involves all aspects relating to the philosophical and ethical arguments relating to implementing offsets, also linked to the distrust of the public perception of offsets and the value of their contribution.
- Governance barriers: Includes the lack of government capacity to efficiently and effectively implement the offset policy.
- Environmental improvement barriers: Lukey et al.²⁹⁴ describes these barriers as the ‘barriers associated with the efficacy and sustainability of ecological infrastructure restoration, rehabilitation, and creation interventions’.

²⁹⁰ Personal observation from attending 2018 NBBN annual conference

²⁹¹ P Lukey, T Cumming, S Paras, I Kubiszewski, S Lloyd ‘Making biodiversity offsets work in South Africa – A governance perspective’ (2017) 27 *Ecosystem Services*; Department of Environmental Affairs, 2011a; National Planning Commission, 2011.

²⁹² Brownlie, et al. Biodiversity offsets in South Africa – challenges and potential solutions (2017) 35(3) *Impact Assessment and Project Appraisal* 250.

²⁹³ P Lukey, T Cumming, S Paras, I Kubiszewski, S Lloyd ‘Making biodiversity offsets work in South Africa – A governance perspective’ (2017) 27 *Ecosystem Services* 283.

²⁹⁴ P Lukey, T Cumming, S Paras, I Kubiszewski, S Lloyd ‘Making biodiversity offsets work in South Africa – A governance perspective’ (2017) 27 *Ecosystem Services* 283.

Brownlie et al²⁹⁵ identified challenges for delivering biodiversity offsets with worthwhile conservation outcomes, namely the absence of a national offset policy and related inconsistent decision-making and poor drafting of license conditions, slack enforcement and monitoring of offsets, insufficient government capacity to evaluate, design and implement offsets and problems establishing financing mechanisms.

The link from these challenges to actual implementation of the wetland mitigation bank concept is the creation of the market for the mitigation bank through regulatory requirements for implementation of offsets. With current *ad hoc* demands for mitigation through offsets, there is no market demand for offset banks. Even in the USA, one of the most critical requirements for implementation of a successful mitigation bank has been acknowledged as the ‘demand for mitigation’,²⁹⁶ which in essence is the issuing of permits with offset requirements, which is legally enforceable, thereby in essence creating a wetland mitigation banking market.

Based on the review of the US 1995 mitigation banking guidelines,²⁹⁷ various key elements were identified as being problematic, which led to additional guidelines or more stringent requirements brought into the USA 2008 Rule.²⁹⁸ The main problems included:

- Guidelines for initial release of credits;
- Use of financial assurances;
- Site protection;
- Ecological performance standards;
- Use of preservation; and
- Dispute resolution.²⁹⁹

Where relevant in terms of challenges of implementation of a wetland mitigation banking policy has been discussed below, or else the relevant aspects have been discussed in the analysis of a model mitigation bank (See Section 3.3).

²⁹⁵ Brownlie, et al. Biodiversity offsets in South Africa – challenges and potential solutions (2017) 35(3) *Impact Assessment and Project Appraisal* 250.

²⁹⁶ The Business of Banking. Session 5. *A training course for mitigation banking and in-lieu fee program Interagency Review Teams* 2018.

²⁹⁷ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008.

²⁹⁸ Ibid.

²⁹⁹ Overview of third-party mitigation. Session 1. *A training course for mitigation banking and in-lieu fee program Interagency Review Teams*, June 2018.

5.1.1 Lack of implemented biodiversity offset policy

The status quo of the lack of a promulgated National Biodiversity Offset Policy has been confirmed by numerous sources as a gap in the current conservation efforts of wetlands.³⁰⁰ Lukey³⁰¹ provided guidance at the National Biodiversity and Business Network (NBBN) annual conference in October 2018 that it is expected to see these regulations promulgated at the end of the first quarter of 2019. As per Kershaw³⁰², various issues raised during the initial review in 2016 has been addressed in the updated draft Biodiversity Offset Regulations. These updated draft offset regulations will again be available for a review period, after which it will be updated and potentially that version will finally be promulgated as the first national offset regulations in South Africa. The updated draft regulations national offset regulations are expected to be available for public comment during the first quarter of 2019.³⁰³

5.1.2 Integration with other legislation, policies and frameworks

Various policies, frameworks, plans and strategies have been compiled by South African national government, and numerous of them support the offset and mitigation banking concept (see detail discussion in Section 4.2). These strategic planning documents cross-reference each other and the outcomes and goals are similar, hence acceleration measures were identified and those applicable to offset and mitigation banking have been reviewed and extracted from the NBF,³⁰⁴ and summarized in Table 5.1. The successful implementation of these acceleration measures is critical for successful implementation of biodiversity offsets, in order to create the market for mitigation banks.

5.1.3 Credit management

In order for a wetland mitigation bank to function successfully, certain key aspects as discussed in Section 3.3.1 (credit management) would require additional attention in terms of the details of purchasing due to no legal financial mechanism being available. This would link up with the site protection requirements (Section 3.3.2) for in perpetuity management, which is currently not adequately defined.

³⁰⁰ Brownlie, et al. Biodiversity offsets in South Africa – challenges and potential solutions (2017) 35(3) *Impact Assessment and Project Appraisal* 250.

³⁰¹ P Lukey Fulfilling the promise of the mitigation hierarchy (2018) NBBN annual conference

³⁰² P Kershaw Status of the National Offset Policy (2018) NBBN annual conference

³⁰³ Ibid

³⁰⁴ GN813 of GG32474, 3/08/2009.

5.1.4 Alignment with EIA process

As discussed in Section 4.1.2, the current EIA Regulations is not conducive towards the time period required for assembling and implementing an offset, as there is only one option for extension of an agreed timeframe.³⁰⁵ To combat this problem, specialist studies should ideally be conducted prior to submission of the EIA application (when the clock starts ticking for the time limits of the application), to enable biodiversity specialists adequate time to conduct the necessary site assessments and recommend mitigation measures as per the mitigation hierarchy³⁰⁶ with regards to the sensitivities of the site and, if still required, highlight the requirements of an offset.³⁰⁷ However, to manage and ensure successful implementation of an offset prior to submission of the EIA application, is extremely challenging,³⁰⁸ and not feasible due to the challenges of integration with the rest of the professional project team at such an early stage of the project, for instance detail engineering details.³⁰⁹ The outcome of the review study done by De Witt et al³¹⁰ confirmed that the timing of the involvement of the biodiversity specialists are critical in maximizing the benefits from the offset by obtaining the benefit of transparency and involvement of stakeholder engagements, offset enforceability after adherence to the mitigation hierarchy, and guaranteeing the offset prior to commencement of the development. However, due to the current ad hoc offset requirements (see Section 5.1.1) and challenges with implementing offsets (See Section 5.1), we debate that even with foremost input from biodiversity specialists, identification of an offset may still delay the project indefinitely, however the availability of a suitable mitigation bank would have eased this challenge.

Elliott concludes, there will be time constraints with legal registration of conservation servitudes and nature reserves due to both of these processes requiring legal procedures to be initiated and implemented.³¹¹ These processes will be part of the banking establishment process

³⁰⁵ GN326 of GG40772, 7/04/2017; 220.

³⁰⁶ GN276 of GG40733, 31/03/2017; 18.

³⁰⁷ GN276 of GG40733, 31/03/2017; 11.

³⁰⁸ T A. Gardner, A Von Hase, S Brownlie, J M. M. Ekstrom, J D. Pilgrim, C E. Savy, R. T. T Stephens, J Treweek, G T. Ussher, G Ward and K Ten Kate. 'Biodiversity Offsets and the Challenge of Achieving No Net Loss'. 2013 (2) *Conservation Biology Journal* 1256.

³⁰⁹ de Witt, M., J Pope, F Retief, A Bond, A Morrison-Saunders, C Steenkamp (2019) *75 Biodiversity offsets in EIA: Getting the timing right*. Environmental Impact Assessment Review 2.

³¹⁰ Ibid 10.

³¹¹ F. Elliott, *Biodiversity Offsets and the EIA Process: The Fairbreeze Mine Conundrum*. (unpublished LLM thesis, University of KwaZulu Natal, 2014) 34.

and would thus eliminate the time constraints from implementing offsets by permittees, when required.

5.1.5 Public consultation

Even though there are strict provisions for public participation in the overarching EIA process, these requirements are lacking in the Draft Offset Guidelines. By excluding this aspect from the offset process (and ultimately mitigation banking regulatory process), it confines these proposed protected areas to an isolated approach, with little to none, except coincidence of involvement, input and assessment from neighboring property owners and other interested I&APs. The aim of an offset and particularly a mitigation bank, is to create an integrated approach for increasing the protected areas based on single project approval impacts. Therefore, one of the most critical aspects of offsets and mitigation banks and related opportunities such as stewardships, are the potential involvement of neighbouring property owners and other interested parties such as conservation bodies or Non-Governmental Organizations (NGOs) in rehabilitation and protection of the offset site.

5.1.6 National registers

The establishment of national registers for management of biodiversity in South Africa would require: a national register with EA's, protected areas (on all three levels of management), an offset register (with all current commitments included), and then ultimately a mitigation banking register. The EA register should include all conditions, objectives and management plans critical for ensuring transparency and accountability.

In April 2016,³¹² it was confirmed that environmental authorisations and other related environmental permits issued under NEMA and SEMA,³¹³ should be made available when requested in terms of s 15(1) of the Promotion of Information Act,³¹⁴ however this is a cumbersome process and does not fulfill the function nor provide the value of a public accessible offset register. The protected areas register should include the national, provincial and local protected areas as set out in NEMPAA and the NBSAP SO1 in terms of management of biodiversity assets and their contribution to the economy, and social upliftment, as set out in Section 4.1.3. The offset register should include all current offset commitments including all

³¹² GN435 of GG39922, 16/04/2016; 97-99.

³¹³ Includes the Environment Conservation Act (Act 73 of 1989), NWA, the NEMPAA, the NEMBA, the NEMAQA including all regulations and subordinate legislation made in terms of these Acts.

³¹⁴ Act 2 of 2000.

three government tiers, stipulated in EAs, WULs, NFA permits and any other conditions in any other applicable biodiversity permits.

This register/registers would then ultimately be associated with the mitigation banking register for credit management and understanding the volatility of the banking market.

5.2 THE BUSINESS OF BANKING

When the biodiversity offset regulations³¹⁵ are implemented, there will be a significant increased need for offsets on a national scale. This demand would need to be satisfied by means of the four approaches to offsetting namely, securing offsets for protection and effective management in perpetuity, enhancing management of degraded areas, averting risk or imminent projected loss of biodiversity by removing the underlying causes of biodiversity loss in the area and re-creating or fully restoring lost habitat.³¹⁶

By securing the offset, it is stated in the draft biodiversity offset regulations that the preferred option is to declare the area as protected area under NEMPAA.³¹⁷ These draft regulations then further state that only should this not be recommended by the relevant statutory conservation authorities, or is not appropriate in the specific circumstances, should alternative options be considered. Based on an assessment of the implementation of mitigation banks elsewhere in the world, this would not be the optimal solution.

Various factors will influence the feasibility and success of a conservation mitigation banking system which should be considered during development and implementation, such as

‘institutional oversight and monitoring, adequate supply and demand of credits, the additionality of conservation actions and outcomes, equivalency considerations (like for like) of credits and debits and geographic scale of exchange, and aspects relating to the permanence of outcomes and transfer of liability for damages/losses.’³¹⁸

The key driving force of making a success of a banking business, is having the demand for the credits.³¹⁹ Credits are driven by the issuing of permits with conditions for wetland offsets on a national scale. In order for a commercial mitigation banker to make the business decision in

³¹⁵ GN276 of GG40733, 31/03/2017; 31.

³¹⁶ Ibid at 32.

³¹⁷ Ibid at 38.

³¹⁸ A Von Hase, 2013. Deliverable 1.1: Preliminary review of international experience with conservation banking Version 0.1 Unpublished draft report prepared for eThekweni Municipality and the Critical Ecosystem Partnership Fund prepared by Forest Trends and Eco-Pulse Environmental Consulting Services 2.

³¹⁹ Overview of third-party mitigation. Session 1. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

terms of pursuing and committing to a mitigation bank, access to current issued permits (including NWA, MPRDA, NEMA as well as other biodiversity related permits such as NFA and NEMBA) should be available. This data will provide the critical market statistics to the banker in terms of site selection and service areas. Linked to these statistics would be the future growth projections, which are based on national, provincial, regional and municipal spatial development frameworks, land use schemes and municipal land use planning.³²⁰ Interviews with public and private entities agencies such as South African National Roads Agency (SANRA), Department of Transport (DOT) and Department of Energy (DOE) to understand their requirements and future developments will also influence the market demand. Further aspects for consideration in the business of banking is the service area.³²¹ Smaller service areas might be calculated based on smaller catchments, critical habitat designations and political boundaries, resulting in a smaller wetland bank.

Koh et al³²² stated that however the state is at the pronouncement of designing and implementing biodiversity offset policies deciding the market involvement based on the country-specific political-economic culture, by playing a role during calculation of biodiversity losses and gains, confirmation of trading conditions and approval of compensation site locations of all biodiversity policies.³²³

Interestingly, the commercial mitigation banker will have to compete against stewardship programs, and would need to be informed of potential large-scale private stewardship programs which is planned for the catchment by private landowners, such as the Natuurboerdery® concept implemented by ZZZ³²⁴, as it may potentially impact the regional market projections.

Ideally, there should be an option for a joint programme for stewardship/mitigation bank to ensure the maximum benefits of both options are incorporated into the banking programme design and long-term conservation goals are reached through implementation of the mitigation banks.

³²⁰ Act 16 of 2013.

³²¹ Service area is defined in the Washington State Wetland Mitigation Bank Service Area Guidance as the ‘designated geographic area within which the bank can reasonably be expected to provide, and is authorized to provide, appropriate compensatory mitigation for unavoidable impacts to wetlands and other aquatic resources.’

³²² NS Koh, T Hahn & WJ. Boonstra “How much of a market is involved in a biodiversity offset? A typology of biodiversity offset policies” (2019) 232 *Journal of Environmental Management* 689

³²³ Ibid

³²⁴ K McCann (2017) Corporate Environmental Stewardship. Case studies of corporate involvement in environmental investment in South Africa. NBBN annual conference.

5.3 FORWARD WITH COMBATTING THE CHALLENGES

The NBF integrates the biodiversity planning aims and goals with identification of the frameworks, strategies and plans for implementation to succeed in implementation of the NBSAP priorities, by means of identified ‘accelerators’.³²⁵ These accelerators were identified as part of a consultative process during compilation of the NBF and forms part of the existing collation of priorities that have already been identified that enables alignment between the NBSAP and other strategic priorities to maximize impact.³²⁶ In order to align the focus on implementation of proposed offset regulations and ultimate mitigation banks, the SOs from the NBSAP relevant to biodiversity offsets and mitigation banking are included in Table 5.1 below.

Table 5.1 provides detail information regarding the availability of various biodiversity planning aims and goals based on the NBSAP priorities, which is key to understanding that the overarching planning systems within South Africa can accommodate implementation of wetland banking regulations in the future.

³²⁵ NBSAP 42.

³²⁶ Ibid.

Table 5.1. Recommended acceleration measures, organized by NBSAP strategic objectives, outcomes and high priority activities³²⁷

Strategic Objective	NBSAP Outcome	High priority NBSAP activities:	Relevance/contribution to the offset legal regime
<p>SO 1: Management and conservation of biodiversity assets and their contribution to the economy, rural development, job creation and social well-being is enhanced</p>	<p>1.1: The network of protected areas and conservation areas includes a representative sample ecosystems and species, and is coherent and effectively managed</p>	<p>1.1.1. Expand the protected area estate across all ecosystems 1.1.2. Expand the network of conservation areas through mechanisms under the Biodiversity Act 1.1.3. Strengthen capacity for Biodiversity Stewardship Programme</p>	<p>These high priority activities directly relate to the Protected Areas Expansion Strategy and refer to extension of National Parks and buffer zones therefore. This policy as well as the buffer zone strategy for National Parks, are closely linked to creating offset areas in perpetuity by means of changing the land use to protected areas of buffer zones, with restrictive conditions in terms of land use. These properties are critical in terms of expansion of priority biodiversity areas. The Biodiversity Stewardship programme is integral in terms of implementation of mitigation banks, and proposed activities relating to the improvement of the current Biodiversity Stewardship guidelines³²⁸ and general concept, is critical for future establishment of mitigation banks.</p>
	<p>1.4 Biodiversity conservation supports the land reform agenda and socio-economic opportunities for communal landholders</p>	<p>1.4.1. Strengthen the LRBSI including approval of guidelines, strategies and implementation plans developed through the DEA-DRDLR-SANBI alliance. 1.4.2. Facilitate settlement of land claims in protected areas and the conservation estate</p>	<p>Implementation of the national strategy for the land reform and LRBSI as well as facilitation of skills development within a biodiversity economy will enhance the opportunity for successful banking operation.</p>

³²⁷ GN1143 of GG41996, 26/10/2018; 42-56.

³²⁸ South African National Biodiversity Institute. *The Business case for biodiversity stewardship. A report produced for the Department of Environmental Affairs.* (2017).

Strategic Objective	NBSAP Outcome	High priority NBSAP activities:	Relevance/contribution to the offset legal regime
			Finalization of land claim settlements and biodiversity stewardship agreements will provide the option for co-management of high priority biodiversity areas, such as sustainable wildlife economy and/or nature-based business opportunities.
<p>SO 3: Biodiversity considerations are mainstreamed into policies, strategies and practices of a range of sectors</p>	<p>3.6 Biodiversity considerations are integrated into the development and implementation of policy, legislative and other tools</p>	<p>3.6.1. Develop, implement, review and update legislative and other tools that ensure the protection of species and ecosystems</p> <p>3.6.2. Integrate the value of biodiversity into national accounting and reporting systems</p> <p>3.6.3. Integrate biodiversity into sector policies and legislation</p>	<p>Implementing the National Biodiversity Offsets Policy is included as part of the High priority area 3.6.1. This policy will open the market for mitigation banking.</p> <p>Development of a national accounting and reporting system will contribute to the role South Africa plays within the EU Natural Capital Accounting and Valuation of Ecosystem Services project.</p> <p>By integrating high priority biodiversity areas into sector policies such as agricultural legislation, it will enhance the opportunities for banks within un-useable areas on privately owned land.</p>

The important aspects critical to the successful implementation of wetland mitigation banking legislation within South Africa forms part of the SO's highlighted in Table 5.1, they include:

- Extension of National parks and Buffer zones by creating offset areas in perpetuity through amendment of the land use with restrictive land use conditions;
- Continuous and increasing establishment of Biodiversity Stewardship opportunities;
- Implementation of the national land reform strategy through means of the LRBSI which will unlock conservation as well as job opportunities, as well as reduce the conflict between conservation land management and communal lands.
- The LRBSI will also contribute to finalization of land claim settlements and biodiversity stewardship agreements will provide options for co-management;
- Implementation of the National Biodiversity Offsets Policy will unlock the wetland mitigation banking opportunity for implementing regulations;
- Critical to the successful operation of a wetland mitigation bank, is the development of a national accounting and reporting system relating to Natural Capital Accounting and Valuation of Ecosystem Services projects; and
- Benefits to the agricultural sector for creating opportunities for financial and conservation gains through wetland mitigation banking opportunities on un-useable agricultural lands.

In conclusion, this section proves that the South African legislative framework is in some instances aligned with the expected soon to be promulgated, offset regulations and will then provide for the related mitigation banking requirements in the future. Furthermore, these goals are part of the CBD international commitments and ultimately should therefore be followed through by South African regulators as per their acceleration commitments set out in Table 5.1.

6. CHAPTER 6: CONCLUSIONS

Currently local wetland conservation is being implemented through various levels of enforcement of constitutional sustainable development principles, certain NEMA principles, EIA regime,³²⁹ the WULA process,³³⁰ draft biodiversity offset regulations,³³¹ and several national and provincial frameworks and strategies. The national legislation and regulations provide for authorising activities which may have a detrimental impact on wetlands and after adhering to the mitigation hierarchy may then require to be offset via the proposed biodiversity offset regulations.³³² Implementation of these offset regulations would provide an opportunity for larger scale wetland conservation by means of a wetland mitigation bank. These concepts are concluded below as per the discussions in this dissertation.

6.1 IS THERE A NEED FOR WETLAND MITIGATION BANKING IN SOUTH AFRICA?

There are various pieces of legislation and international commitments requiring protection of biodiversity, and specifically wetlands, however there is a lack of legislated wetland offset requirements. Once the draft offset regulations are implemented, the need for mitigation banks nationally will increase significantly. These offset regulations will need to be dovetailed with the current integrated EIA process in order to facilitate planning and implementation of wetland offsets.

In considering wetland offsets and mitigation banks, it should always be kept in mind that offsetting is the last option within the mitigation hierarchy, therefore all other options in terms of management of impacts should have already been investigated, e.g. avoidance prior to issuing the authorisation/permit with offset conditions. These offsets will thus be implemented as a legal permit condition which needs to be fulfilled in order to remain compliant. The benefits offered by a wetland mitigation bank, e.g. establishment and thereby availability of suitable wetland habitat prior to the need for the offset thereby leads to reduced rehabilitation failure risk, more efficient compliance, greater planning and scientific input and reduction in compliance requirements, would at this stage of the process be highly sought after by all permittees. There is therefore a strong case for the development and implementation of the

³²⁹ GN276 of GG40733, 31/03/2017.

³³⁰ GN267 of GG40713, 24/03/2017

³³¹ GN326 of GG40772, 7/04/2017.

³³² D Midgley. Biodiversity offsets Towards an Effective Legal Framework in South Africa. (unpublished LLM Thesis, University of Cape Town, 2015) 16.

wetland mitigation banking option within South Africa. Yet, in order to create the wetland mitigation banking market, the promulgation of offset regulations is critical.

6.2 WHAT SHOULD A GOOD MITIGATION BANKING SYSTEM LOOK LIKE?

The recommendation from this dissertation is that the wetland banking concept from the USA should be reviewed in detail in terms of the current offset and mitigation banking proposals for South Africa and should be adapted to local conditions. The USA banking model has been tried and tested for more than 2 decades and underwent a detail review phase with a subsequent update to reflect those recommendations in 2008.

The 2008 US Rule³³³ and related guidelines and manuals, provides valuable guidance in terms of the avoiding pitfalls which could be applied with local experience during consideration and planning of wetland mitigation banks.

6.3 THE CURRENT SOUTH AFRICAN LEGISLATIVE REGIME IN RELATION TO PROPOSED WETLAND MITIGATION BANKING

With the Constitutional and NEMA requirements for fair public involvement in EIA processes, this same principle should apply to offset design within the EIA process,³³⁴ valuing the I&APs needs and interests and environmental justice.³³⁵ It is therefore recommended that offset and related implementation, e.g. stewardships, be available for public review and involvement.³³⁶ The problem with implementing isolated stewardship programmes is the limited availability of wetland protection opportunities to the State/landowner, however the wider benefits provided by an established, authorized bank to a wide range of permittees, remains lacking.

Currently the State and landowners³³⁷ via stewardships have an exclusive right to stewardship options, and the commercial mitigation banker is excluded from this opportunity to contributing to wetland conservation in South Africa. Stewardship options are usually more

³³³ Compensatory Mitigation for Losses of Aquatic Resources Federal Register Vol 73, No. 70 10 April 10 2008.

³³⁴ Section 2(4)(f) of NEMA.

³³⁵ Section 2(4)(c) of NEMA.

³³⁶ P Kershaw Status of the National Offset Policy (2018) NBBN annual conference.

³³⁷ 'Landowner' includes private landowners as well as communities on communal land. As defined in SANBI. *The Business case for biodiversity stewardship. A report produced for the Department of Environmental Affairs.* 2017.

focussed on isolated sites and requires buy-in from the landowners and sustainable financing is challenging.

The current South African legislative regime provides the opportunity for offsets and banking, and so does the national frameworks and strategies, however, overcoming the identified challenges to successful implementation of these legislation and legislative tools will require coherence and effective implementation of various regulations.

6.4 CHALLENGES AND THE WAY FORWARD WITH WETLAND MITIGATION BANKING IN SOUTH AFRICA

Based on a review of the current approaches and preferred methods of implementing additional options for expansion of protected areas, the author is of the opinion that there is a lack of integration between the conditions of issued permits for offset areas, and the opportunities for the permittee to fulfill its permit conditions within the legislative and policy/framework regime identified as part of the national and provincial strategies. There needs to be an opportunity for commercial mitigation bankers to contribute to national and provincial wetland conservation via a strictly regulated process. In that way, the full potential and benefits of a wetland mitigation banking system can be fulfilled within South Africa, and the individual permit holders can successfully mitigate their impacts. McCann encourages the conservation sector to drive a process with government, private sector and landowners to utilise development of ‘conservation banks’ for long-term security of critical biodiversity areas, supported with sustainable financing to effectively manage those areas.³³⁸

The benefit that commercial financial bankers would bring to the sustainable conservation discussions include creating economic incentives to protect and restore habitat linked to an economic disincentive to impact habitat, actual ‘real’ costs for impacting the environment and private capital flowing into protecting and restoring habitat.³³⁹

Various gaps identified for further action includes the compilation of a comprehensive, up-to-date, accurate spatial ‘database of protected areas and a national spatial database layer on land ownership and tenure’.

³³⁸ K McCann (2018) Can a Conservation Land Bank sustainably fund protected area expansion and management? Proceedings from The Conservation Symposium.

³³⁹ The business of banking. Session 5. A training course for mitigation banking and in-lieu fee program Interagency Review Teams, June 2018.

So, currently draft biodiversity conservation legislation and thinking within South Africa is mainly directed towards the stewardship option in terms of long-term conservation, however to reconcile individual permittee wetland losses, commercial wetland mitigation banking as per the tried and tested methodology within the international milieu, with the necessary checks and balances, should also be considered as an achievable option within the South African legislative environment.

7. CHAPTER 7

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