Wetlands: An ecosystem service South Africa can afford to protect

A critical evaluation of the current legal regime and mechanisms to facilitate the use of payment for ecosystem services to the conservation of wetlands in South Africa

Deidre Linda Herbst

Dissertation presented for MPhil
Department of Law
University of Cape Town

Supervisor: Professor Alexander Ross Paterson
University of Cape Town

Word Count 25142 words
Research dissertation presented for the approval of Senate in fulfillment of part of the requirements for MPhil Environmental Law. The other part of the requirement for this qualification was the completion of a programme of courses.

Declaration

I, Deidre Linda Herbst, hereby declare that the work in this dissertation is my own original work and opinion. I have referenced and acknowledged the work of others. I understand the regulations related to the submission of this dissertation including plagiarism, referencing and length.

15 September 2015

Signed
The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.
ABSTRACT

Wetlands cover a small portion of the world’s surface area but they provide the most significant contribution to people for survival and sustainable development. In South Africa wetlands are considered the most threatened of all the country’s ecosystems. South Africa’s legal framework governing wetlands recognises the importance of natural infrastructure and its contribution to ecosystem services. Notwithstanding this recognition, the deteriorating status of South Africa’s wetlands is evidence that the legal framework, dominated by a fragmented command and control approach, has not adequately addressed the risks or considered the integration of potentially innovative mechanisms to facilitate their protection and restoration. Payment for Ecosystem Services (PES) is a market based instrument which has proven to be a successful mechanism in several developed and developing countries for restoring the functioning of the natural environment and providing economic returns to those responsible for having done so. This dissertation proposes that PES will provide a viable and effective tool to complement the existing regulatory mechanisms in the South Africa legal framework to conserve wetlands. Albeit there are several challenges which would need to be overcome such as land tenure in rural areas. The successful rollout of PES can be achieved through improved co-operative governance, an increased focus and improved legal regime in the agriculture sector and the successful implementation of existing policies and strategies. It is critical that policy and regulations specific to a PES scheme are introduced to enable effective integration with the existing legal framework, facilitate participation, specifically of rural communities and efficient and effective administration.
# TABLE OF CONTENTS

List of abbreviations .................................................................................................................. 5  

CHAPTER 1  INTRODUCTION........................................................................................................... 7  
1.1 The context .......................................................................................................................... 7  
  1.1.1 Wetland function and status ......................................................................................... 8  
  1.1.2 Payment for ecosystem services .................................................................................. 11  
  1.1.3 Legal framework ......................................................................................................... 12  
1.2 Purpose, scope and methodology ....................................................................................... 14  
1.3 Structure of the dissertation .............................................................................................. 15  

CHAPTER 2  CRITICAL REVIEW OF SOUTH AFRICA’S CURRENT LEGAL REGIME GOVERNING WETLANDS .......................................................................................................................... 17  
2.1 An overview of the current legal regime governing wetlands ........................................... 17  
  2.1.1 Constitutional regime .................................................................................................. 17  
  2.1.2 Framework environmental regime ............................................................................. 20  
  2.1.3 Land use planning regime ......................................................................................... 23  
  2.1.4 Fresh water regime ..................................................................................................... 25  
  2.1.5 The biodiversity regime ............................................................................................. 29  
  2.1.6 Coastal management regime ....................................................................................... 33  
  2.1.7 Agricultural regime ................................................................................................... 34  
  2.1.8 Fiscal regime ............................................................................................................. 36  
2.2 An analysis of the current legal regime governing wetlands ............................................. 38  
2.3 Conclusion .......................................................................................................................... 43  

CHAPTER 3  THEORETICAL ASSESSMENT OF PAYMENT FOR ECOSYSTEM SERVICES ................................................................................................................................. 44  
3.1 What is payment for ecosystem services? .......................................................................... 45  
3.2 Advantages and disadvantages of PES ............................................................................. 48
CHAPTER 3 Theoretical legal prerequisites for implementing PES schemes

3.3 Theoretical legal prerequisites for implementing PES schemes

3.3.1 Enabling policy and legal framework

3.3.2 Governance and institutional capacity

3.3.3 Scope and scientific baseline

3.3.4 Source and ownership of resources

3.3.5 Funding and administrating PES

3.3.6 Qualification criteria

3.3.7 Valuation and payment

3.3.8 Monitoring

3.3.9 Compliance

3.3.10 Penalties

3.4 Conclusion

CHAPTER 4 EVALUATION OF SOUTH AFRICA’S LEGISLATIVE FRAMEWORK TO FACILITATE PES

4.1 Enabling policy and legal framework

4.2 Governance and institutional capacity

4.3 Scope and scientific baseline

4.4 Source and ownership of resources

4.5 Funding and administrating PES

4.6 Qualification criteria

4.7 Valuation and payment

4.8 Monitoring

4.9 Compliance

4.10 Penalties

4.11 Conclusion

CHAPTER 5 CONCLUSION

Bibliography
## List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMP</td>
<td>Biodiversity Management Plan</td>
</tr>
<tr>
<td>BMPE</td>
<td>Biodiversity Management Plan for Estuaries</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CARA</td>
<td>Conservation of Agricultural Resources Act</td>
</tr>
<tr>
<td>CMA</td>
<td>Catchment Management Agency</td>
</tr>
<tr>
<td>DAFF</td>
<td>Department of Agriculture, Forestry and Fisheries</td>
</tr>
<tr>
<td>DEA</td>
<td>Department of Environmental Affairs</td>
</tr>
<tr>
<td>DMR</td>
<td>Department of Mineral Resources</td>
</tr>
<tr>
<td>DWS</td>
<td>Department of Water and Sanitation</td>
</tr>
<tr>
<td>FONAFIFO</td>
<td>National Forest Financing Fund (Costa Rica)</td>
</tr>
<tr>
<td>IDP</td>
<td>Integrated Development Plans</td>
</tr>
<tr>
<td>MBI</td>
<td>Market-based Instruments</td>
</tr>
<tr>
<td>NBA</td>
<td>National Biodiversity Assessment</td>
</tr>
<tr>
<td>NBF</td>
<td>National Biodiversity Framework</td>
</tr>
<tr>
<td>NBSAP</td>
<td>National Biodiversity Strategy and Action plan</td>
</tr>
<tr>
<td>NEMA</td>
<td>National Environmental Management Act</td>
</tr>
<tr>
<td>NEMBA</td>
<td>National Environmental Management: Biodiversity Act</td>
</tr>
<tr>
<td>NEMICMA</td>
<td>National Environmental Management: Integrated Coastal Management Act</td>
</tr>
<tr>
<td>NEMPAA</td>
<td>National Environmental Management: Protected Areas Act</td>
</tr>
<tr>
<td>NWRS</td>
<td>National Water Resource Strategy (Edition 2)</td>
</tr>
<tr>
<td>NWA</td>
<td>National Water Act</td>
</tr>
<tr>
<td>PDALFA</td>
<td>Preservation and Development of Agriculture Land Framework Bill</td>
</tr>
<tr>
<td>PES</td>
<td>Payment for Ecosystem Services</td>
</tr>
<tr>
<td>Ramsar</td>
<td>Convention on Wetlands of International Importance Especially as Water Fowl Habitat</td>
</tr>
<tr>
<td>SANBI</td>
<td>South African National Biodiversity Institute</td>
</tr>
<tr>
<td>SDF</td>
<td>Strategic Development Frameworks</td>
</tr>
<tr>
<td>SEMA</td>
<td>Specific Environmental Management Acts</td>
</tr>
<tr>
<td>SPLUMA</td>
<td>Spatial Planning and Land Use Management Act</td>
</tr>
<tr>
<td>TEEB</td>
<td>The Economics of Ecosystems and Biodiversity global initiative</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>WiW</td>
<td>Working for Water</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

1.1 The context

Water security is regarded as one of the most critical issues facing the world today. In 2014, it was ranked third in a perception survey undertaken by the World Economic Forum of the top ten global risks of highest concern, above other environmental concerns such as climate change mitigation and adaptation, increasing extreme weather events and food insecurity.\(^1\) South Africa is recognised as a water-scarce country and one where access to water resources is inequitably spread across different sectors of the population.\(^2\) Domestic water scarcity is exacerbated through the pollution of the water resources and the destruction of natural infrastructure, such as river systems and wetlands.\(^3\) According to recent assessments, wetlands are the most threatened ecosystem in South Africa.\(^4\)

Notwithstanding the recognition provided by the legal framework governing wetlands of the importance of natural infrastructure and its contribution to ecosystem services,\(^5\) the status of the South African wetlands is evidence that this legal framework has not adequately addressed the risks or considered the integration of potentially innovative mechanisms to facilitate their protection and restoration.

\(^2\) Department of Water Affairs *National Water Resource Strategy* 2 GN 845 GG No. 36736 dated 16 August 2013, iii, iv, 7 and 8. According to this document, South Africa has low levels of rainfall relative to the world average, with high variability and high levels of evaporation due to the hot climate, and increasing challenges from water pollution. South Africa is the 30th driest country in the world and has less water per person than countries widely considered to be much drier such as Namibia and Botswana.
This dissertation seeks to critically evaluate the current legal framework governing wetlands and to assess whether Payment for Ecosystem Services (PES) provides a viable and effective tool to complement it.

1.1.1 Wetland function and status

Wetlands\(^6\) cover a small portion of the world’s surface area but they provide the most significant contribution to people for survival and sustainable development.\(^7\) Wetlands traverse terrestrial systems, form buffers along rivers and are influenced by water flow across catchments. Wetlands provide indirect benefits to people and the natural environment such as water purification, sustained stream flow, flood reduction, reducing the impacts of sea surges, groundwater recharge or discharge, erosion control and supporting species.\(^8\) The direct benefits of wetlands are water supply, provision of usable resources including food, cultural significance, tourism and recreation, education and research.\(^9\) Coastal ecosystems, including mangrove swamps and estuaries, are estimated to contribute 40% to global ecosystem services.\(^10\)

Poorer communities are most vulnerable to the impacts of wetland degradation because of their direct use of wetlands for agricultural activities which provide food and grazing for their livestock through all seasons in the year and as a source of natural medication and freshwater.\(^11\) In some cases a wetland can be the only source of livelihood for rural communities and could provide

\(^6\) Section 1(1)xxx National Water Act defines a wetland as “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 land in normal circumstances supports or would support vegetation typically adapted to life in saturated soils”.


\(^8\) Secretariat Water and biodiversity Natural Solutions for Water Security Montreal 30.

\(^9\) Collins N.B., Wetlands: The basics and some more Free State Department of Tourism Environment and Economic Affairs 51.

\(^10\) Russi D., ten Brink P., Farmer A., Badura T., Forster J., and Davidson N. The Economics of Ecosystems and Biodiversity for Water and Wetlands. IEEP, London and Brussels; Ramsar Secretariat, Gland 10.

\(^11\) Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands Key messages.
substantial value to individuals whose financial income is already very low.\textsuperscript{12} Equally important is the potential negative impact on people’s health due to the loss of water purification services provided by wetlands.\textsuperscript{13}

Communities’ water demands have traditionally been met through the development of infrastructure and engineering solutions\textsuperscript{14}, for example transfer schemes, canals and sewage works, rather than by investing in natural capital. Studies have shown that the net present value of a naturally functioning ecosystem is higher than that of an engineered altered use system such as intensive farming.\textsuperscript{15} For example, the monetary value in land vegetated wetlands is estimated at a maximum value of 44,597 int.$ per hectare per annum, whereas the monetary value of services provided by mangroves and tidal marshes is far higher at 215,349 int.$ per hectare per annum.\textsuperscript{16}

The international status of wetlands has been deteriorating for several centuries.\textsuperscript{17} According to the Economics of Ecosystems and Biodiversity (TEEB) initiative, it is estimated that since 1900 at least 50% of the world’s wetlands have been lost. The loss of wetlands in the United States of America and Europe has slowed, but not stopped. In the last 20 years the loss of wetlands in several other continents and countries has declined at a concerning rate, for example in China, the Republic of Korea and Singapore.\textsuperscript{18} It is estimated that 12.8 million square kilometres of wetland remain in the world, although this is thought to be an underestimate.\textsuperscript{19} Not only have

\textsuperscript{12} National Biodiversity Assessment 75.
\textsuperscript{13} Agardy et al Millennium Ecosystem Assessment, Ecosystems and human wellbeing synthesis 13 An international ecosystem assessment found that half of urban populations in developing countries, including Africa, suffer from diseases associated with poor water quality and inadequate sanitation “Worldwide, approximately 1.7 million people die annually as a result of inadequate water sanitation, and hygiene”.
\textsuperscript{14} Turpie J.K., Marais C., Blignaut J.N., The Working For Water Programme: An Evolution of a Payments for Ecosystem Services Mechanism that Addresses Both Poverty and Ecosystem Services in South Africa 2.
\textsuperscript{15} Agardy et al Millennium Ecosystem Assessment, Ecosystems and human wellbeing synthesis 6 10.
\textsuperscript{16} Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 65, 66.
\textsuperscript{17} Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 14 “since roman times in Europe and 17th century in North America”.
\textsuperscript{18} Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 14.
\textsuperscript{19} Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 15.
wetlands decreased in area, the status of wetlands has deteriorated despite recognition of their importance for many decades.\textsuperscript{20}

In 2011, the first wetland inventory for South Africa confirmed that wetlands are the most threatened ecosystem.\textsuperscript{21} The study estimated that at least 50\% of wetlands that previously existed no longer exist. The remaining 300 000 wetlands in South Africa constitute 2.9 million hectares or 2.4\% of South Africa’s surface area. Sixty five percent (65\%) of wetland ecosystems types\textsuperscript{22} are threatened and forty eight percent (48\%) of threatened wetlands were found to be critically endangered.\textsuperscript{23} The percentage of wetland coverage in South Africa at 2.4\% is low when compared with the world coverage of approximately 6\%. This potentially reduces the ability of South Africa’s natural systems to minimise the impact of normal and extreme weather events such as floods. This trend can however be reversed by changing practices and through the restoration of wetlands.

In South Africa most surface water comes from the mountainous areas, in particular the Drakensberg, which provides important ecosystem services in the form of high altitude grasslands and wetlands.\textsuperscript{24} The major threats to wetlands in South Africa are cultivation of land for the production of crops, urbanisation, mining, construction of dams, upstream erosion, water pollution and poor farming practices.\textsuperscript{25}

\textsuperscript{20} Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 15 “In 2012, 127 governments reporting to the Ramsar Convention indicated that the status of their wetlands had deteriorated in recent years in 28\% of countries but improved only in 19\%”.
\textsuperscript{21} National Biodiversity Assessment 14-18; wetlands.sanbi.org.
\textsuperscript{22} The National Freshwater Ecosystem Priority Areas project classified wetlands into 7 wetland types, namely seeps, valley-head seeps, channeled valley bottoms, unchannelled valley bottoms, floodplains, depressions and flats.
\textsuperscript{23} National Biodiversity Assessment 14-18; wetlands.sanbi.org.
\textsuperscript{24} The working for water programme: Evolution of a PES mechanism 2.
\textsuperscript{25} National Biodiversity Assessment 78, found that the most prevalent on site causes of wetland loss are: cultivation (e.g. sugar cane, fruit and wheat) urban development, dam construction and poor grazing management causing erosion. The most prevalent off site causes were disruption of flow regime due to water extraction, effluent discharge and dams, deterioration of water quality, poor grazing management, crop production increasing sediment load.
1.1.2 Payment for ecosystem services

PES is a market-based instrument which facilitates the payment by a beneficiary to a landowner or intermediary parties for activities which achieve enhanced ecosystem services, for example sustaining the integrity of a wetland to provide for the natural purification of water. The beneficiary can be industry, private parties or organs of state. Although determining the value of a total ecosystem can take some time, it is relatively easy to determine the value of wetlands compared with built infrastructure such as a water treatment plant or pipeline. For this reason PES has been most frequently applied to water related ecosystems, for example the protection of forests to sustain catchments and the changing of agricultural activities to improve the quality of water or to enhance biodiversity.26

The important link between economics and natural infrastructure is internationally recognised.27 The value of incentive measures is also recognised in the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar)28 and the Convention on Biological Diversity (CBD)29 as a tool towards achieving the wise use of wetlands. Specifically, PES schemes have proven to be a successful mechanism in several developed and developing countries for restoring the functioning of the natural environment and providing economic returns to those responsible for having done so.30 Several governments have integrated the use of PES into their legal framework31 including the use of financial incentives and cross

---

26 Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 43-44.
29 Convention of Biodiversity Conference of Parties 5, Decision V 15. Acknowledging the importance of incentive measures in achieving conservation for sustainable development.
30 Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands 43-44 These include: Costa Rica’s PES Programme; the United Kingdom’s Sustainable Catchment Management Programme (SCaMP); and France’s Vitte PES Programme.
31 Barton H & Thompson Jr Ecosystem Services and Natural Capital: Reconceiving Environmental Management NYU Environmental Law Journal Volume 17 474-482; Smith, S., Rowcroft P. Everard M. Couldrick L., Reed M.
compliance integrated into policy directives and programmes. A key consideration for protecting wetlands is to address the impact of agricultural activities, and hence governments have integrated the use of PES into agricultural reform.\(^\text{32}\)

There remain several challenges to the successful implementation of PES. Experience has shown that if not properly implemented the mechanism could have negative outcomes impacting on regional and national economies.\(^\text{33}\) Successful implementation of PES schemes requires an integrated understanding of several issues, namely: what are ecosystem services; what are the value of ecosystem services; which ecosystem services should qualify for inclusion in the PES scheme; what are effective institutional arrangements for implementing PES schemes; and what regulatory frameworks need to be introduced to govern the scheme.\(^\text{34}\)

1.1.3 Legal framework

South Africa’s legal framework is aligned with international standards.\(^\text{35}\) This is evident in the rights in the Constitution of the Republic of South Africa (the Constitution),\(^\text{36}\) South Africa’s ratification of international environmental conventions and subsequently the writing into law of the requirements of these

---


Kronenberg, J., and Huacek K. Could Payments for ecosystem services create an “ecosystem services curse?” Volume 18(1) Ecology and Society 1. Ruckeshaus et al Notes from the field: lessons learned from using ecosystem service approaches to inform real world decisions, Ecological Economics Introduction, “Numerous efforts currently are underway to make the concept of ecosystem services operational and linked with decision making”.

Kronenberg et al Could payments for ecosystem services create an “ecosystem services curse?” 1.

Paterson A & Kotze L. Environmental Compliance and Enforcement in SA 329-335; Barton et al Ecosystem Services and Natural Capital 474-482.

Paterson et al Environmental Compliance and Enforcement in South Africa 331.

conventions as well as the revision over the past two decades of environmental legislation to protect South Africa’s precious natural resources. Regulations have been promulgated requiring environmental impact assessments for activities which may negatively impact on the environment. Through the implementation of these regulations the Department of Environmental Affairs (DEA), the Department of Mineral Resources (DMR) and the Department of Water and Sanitation (DWS) have included conditions in Environmental Authorisations and Water Use Licenses for the protection, conservation or rehabilitation of sensitive environments. Compliance and enforcement of the environmental legal framework has been achieved primarily through command and control mechanisms which include fines, inspections, criminal sanction and the requirement for some form of self-regulation.

However, the legal framework enabling the protection of wetlands is fragmented. There are various government departments or agencies with responsibilities and involvement in their regulation, namely the DEA, South Africa National Biodiversity Institute (SANBI), DWS and Department of Agriculture, Forestry and Fisheries (DAFF). There are also several acts and strategies which enable the protection of wetlands.

Given the declining status of wetlands in South Africa, the current legal framework has not resulted in the protection of natural resources, specifically wetlands. The introduction of a market-based instrument such as PES may provide a solution for South Africa. Several factors contribute to the successful implementation of PES, these factors include: first, the inclusion of provisions for incentives and guidelines for implementation into policy; secondly, an

---

38 Kusile power station Water Use License for ash/gypsum co-disposal facility 7 no construction is permitted in or near the wetland, no vehicles may drive in the wetland and all areas affected by construction must be rehabilitated. Record of Decision of the Eskom Generation 5400MW coal fired power station in the Witbank area section 3.2.1.
39 Footnote 5.
appropriate and effective institutional capacity; thirdly, in support of legal mechanisms, a strong technical and scientific basis; and lastly, developing sound processes for monitoring and measuring of the implementation in conjunction with simple but effective contractual arrangements.\textsuperscript{41}

1.2 Purpose, scope and methodology

This dissertation aims to critically explore whether PES provides a viable and effective tool to complement the existing regulatory mechanisms in the South Africa legal framework to conserve South Africa’s wetlands. Several subsidiary issues are canvassed in order to fulfil this broad aim. First, South Africa’s existing policy and legal framework of relevance to wetlands is reviewed in order to assess the extent to which it does or does not provide an effective regime to conserve the country’s wetlands and the ecosystem services they provide to society. Secondly, the theoretical nature of PES is analysed with a view to understanding where it fits within the regulatory framework and what are the essential theoretical legal prerequisites or design criteria for ensuring its success. Key international policies, guidelines and PES projects in Costa Rica\textsuperscript{42} are evaluated in order to distil what are essential theoretical legal prerequisites or design criteria for PES in the context of wetlands. Thirdly, South Africa’s existing policy framework is considered to assess the extent to which domestic policy-makers are open to integrating PES type schemes within the domestic regulatory framework. Finally, South Africa’s existing relevant legal framework is reviewed to understand the degree to which it currently facilitates, or can be amended to facilitate the introduction or enhancement of PES to conserve wetlands. The research underpinning this dissertation comprised of a desk-top study, drawing from relevant local and international literature, legislation and policy.

\textsuperscript{41} Porras I., Barton D.N., Miranda M., and Chacon-Cascante A. Learning from 20 years of Ecosystem Services in Costa Rica International Institute for Environment and Development, London summary.

\textsuperscript{42} Costa Rica has been selected because it is viewed as one of the most successful PES schemes in the world and has lessons which have been learned over a period of more than twenty years Porras Learning from 20 years of Ecosystem Services in Costa Rica 1.
1.3 Structure of the dissertation

With the above objectives in mind, the dissertation is divided into 4 main parts.

Chapter 2 seeks to review the relevant South Africa policy and legal framework to establish how it provides for the protection of wetlands. It considers the Constitution, relevant acts, existing policies, strategies and programmes and evaluates how these provide for the long term protection of wetlands. This analysis proceeds with the Constitution, evaluates the framework environmental legal regime and considers the laws and policies applicable to several relevant sectors, namely land use planning, biodiversity, water, coastal management, agriculture and the fiscal regime.

Chapter 3 considers the theoretical nature of PES, determining where it fits within a regulatory framework and what are the essential theoretical legal prerequisites required to ensure success. Integrated within this theoretical analysis is a discussion of a PES case study in Costa Rica. This analysis is structured under two themes. First, what is PES and the technical and scientific processes required for setting up a successful PES scheme and secondly, a description of the legislative framework required to facilitate PES. The second theme is further distilled into the enabling policy and legal framework, governance and institutional arrangements, scope and scientific baseline, source of ownership and resources, qualification, valuation and payment, monitoring, compliance and penalties.

Having distilled the elements which underpin an effective PES scheme, Chapter 4 critically evaluates the extent to which South Africa’s relevant policy and legislative regime does or does not contain these essential elements. It identifies possible avenues for reform where these elements are absent or need to be adapted to suit South Africa’s specificities. This analysis is structured according to the same themes developed in Chapter 3.

Chapter 5 concludes on whether the PES financial mechanism, combined with the use of prescriptive state-centered regulatory tools and adequate
governance, could successfully halt and overcome the declining trend of the state of wetlands in South Africa. Recommendations of key adjustments required in the South Africa legal framework are provided.
CHAPTER 2
CRITICAL REVIEW OF SOUTH AFRICA’S CURRENT LEGAL REGIME GOVERNING WETLANDS

The status of South Africa’s fresh water resources and specifically its wetlands has been deteriorating, despite the introduction and ever-evolving legal regime since 1994 aimed at the protection of the natural environment. Command and control is the focus and basis of the current legal regime. There is a growing recognition that the introduction of alternative tools such as PES could complement the current legal regime leading to enhanced sustainable practices. This chapter considers the current legal regime governing wetlands, its adequacy and implementation.

2.1 An overview of the current legal regime governing wetlands

2.1.1 Constitutional regime

The Constitution is the overarching law of the land.\(^{43}\) It compels government to respect, protect and fulfill rights.\(^{44}\) It provides an environmental right which sets the basis for the integration and implementation of environmental legislation and compels the state to prevent ecological degradation, secure sustainable development and use of natural resources while promoting economic and social development.\(^{45}\) The Constitution provides several other rights which are relevant including the right to property\(^{46}\), the right to sufficient

---

\(^{43}\) Section 2.
\(^{44}\) Section 7.
\(^{45}\) Section 24.
\(^{46}\) Section 25(4),(5).
food and water, access to information, administrative justice and enforcement of rights. The South African government comprises of national, provincial and local spheres, each of which are provided with authority over various environmental aspects. The protection and supply of water cuts across the three spheres of government. In terms of Schedule 4 Part A of the Constitution, national and provincial government have concurrent legislative competence relating directly or indirectly to areas which influence or impact on the conservation of wetlands; these include agriculture, environment, industrial promotion, conservation (excluding national botanical gardens), national parks and marine resources, pollution control, soil conservation and urban and rural development. In terms of Schedule 4 Part B, the local authority has legislative competence for municipal planning. Schedule 5 provides for exclusive provincial authority for provincial planning.

Protecting wetlands requires a sound scientific basis and integrated planning and decision making across the spheres of government. This cannot be achieved without the co-operative governance provided for in the Constitution, the supporting Intergovernmental Relations Framework Act, and various government departments, forums and engagements.

---

47 Section 27(1)b.
48 Section 32.
49 Section 33.
50 Section 38.
51 Authority of national governance is provided for in Chapter 4 Parliament and Chapter 5 President and National Executive Authority. Provincial spheres of government are provided for in Chapter 6.
52 Authority of Local governance is provided for in Chapter 7.
53 Chapter 3 of the Constitution prescribes the framework for co-operative governance and the structure of government: Section 41(1) requires the spheres of government, amongst other to be effective and accountable, to secure the wellbeing of the people of SA, respect other spheres of government and institutions, not to assume the powers of others, to exercise their powers and perform functions and to co-operate in mutual trust and good faith.
55 Glazewski J. Environmental Law in South Africa 6-4, 6-5 the Department of Co-operative Government was established in 2009 under the Minister of Co-operative Governance and Traditional Affairs. In terms of environmental management there are various engagements which include National Ministers and Provincial MEC’s known as MINMEC. MINTEC is a co-operative meeting held between the Direct General of DEA and Provincial Directors of nature conservation department. There are regular Parliamentary Portfolio Committees held which include representation from National and Provincial Department where engagement on various environmental issues take place with the public.
Once approved by resolution of the National Assembly or National Council of Provinces, the government is bound to integrate requirements of international agreements into law.\textsuperscript{56} South Africa has acceded to two conventions which are relevant to the conservation of water resources and specifically wetlands, the Convention on Wetlands of International Importance Especially of Waterfowl Habitat (Ramsar)\textsuperscript{57} and the Convention on Biological Diversity (CBD).\textsuperscript{58} Resolutions in terms of both these conventions are aimed at protecting wetlands and they reaffirm the importance of including incentive measures for conservation and advocate for the removal of perverse incentives. Parties are urged to develop legislation and policy which will support the use of incentive measures.\textsuperscript{59} The CBD has specific reference to incentives\textsuperscript{60} and the requirement for countries to make funds available to achieve biological diversity.\textsuperscript{61}

South Africa’s accession to these Conventions brings with it the accountability to respond and align our policy and legislation to the requirements.\textsuperscript{62} The plethora of policy, strategy and environmental legislation introduced in South Africa over the past two decades related to the protection of water resources and biological diversity demonstrate a positive response and commitment to environmental management in general and specifically the protection of wetlands as discussed below.\textsuperscript{63}

\begin{itemize}
\item Section 231(1-5) and Section 233 the application of international law.
\item International Convention on Biological Diversity (1992) 31 ILM 818.
\item 8th Meeting Conference of Parties, Ramsar (2002), Resolution VIII.23 2.
\item Convention on Biodiversity article 11 Incentive measures “Each contracting party shall as far as possible and as appropriate adopt economical and socially sound measures that act as incentives for the sound measure that act as incentives for the conservation and sustainable use of components of biological diversity 8”.
\item Convention on Biological Diversity article 20 and article 21: Ramsar Convention as amended, Article 3.
\item Convention on Biological Diversity article 6 states that each contracting party shall, in accordance with its particular conditions and capabilities: a. develop appropriate strategies, plans or programmes for the conservation and sustainable use of biological diversity…..b. integrate as far as possible and appropriate the conservation and sustainable use of biodiversity into sectorial plans programmes or policy.
\item Paterson et al Environmental Compliance and Enforcement 16.
\end{itemize}
South Africa has 22 registered “Ramsar” sites totaling 555,678 hectares.\textsuperscript{64} However, two of these sites are listed in the Montreux Record, reflecting that the sites are at risk due to ecologically changes which have or may occur.\textsuperscript{65}

2.1.2 Framework environmental regime

The National Environmental Management Act (NEMA) is South Africa’s framework environmental law. It addresses inter alia, several principles which are relevant to the protection of wetlands including that the loss of biodiversity is avoided,\textsuperscript{66} pollution and degradation of the environment is avoided and where this cannot be achieved they are remedied and mitigated,\textsuperscript{67} the use and exploitation of non-renewable natural resources is responsible, equitable and considers the consequence of using such resources,\textsuperscript{68} and that renewable resources and ecosystems are not used beyond their integrity.\textsuperscript{69}

Environmental management must be integrated and pursue the best practical environmental option,\textsuperscript{70} a precautionary approach when scientific information is not known or available.\textsuperscript{71} NEMA also stipulates the need for public participation.\textsuperscript{72} It confirms the requirements laid down in the Constitution for the adherence to international commitments.\textsuperscript{73} All of these principles are relevant either directly or indirectly to considering the protection of wetlands and considering mechanisms other than command and control to enhance their integrity. The protection of vulnerable ecosystems such as wetlands is

\textsuperscript{64} The list of Wetlands of International Importance June 2015 www.ramsar.org/pdf/sitelist.pdf.
\textsuperscript{66} Section 4(a)i.
\textsuperscript{67} Section 2(4) a ii.
\textsuperscript{68} Section 2(4) a ii.
\textsuperscript{69} Section 2(4) a vi.
\textsuperscript{70} Section 2(4)b.
\textsuperscript{71} Section 2(4)a.
\textsuperscript{72} Section 2(4)f, g.
\textsuperscript{73} Section 2(4)n.
also specifically identified as requiring intensive attention during all planning processes and activities.\textsuperscript{74}

An integrated approach is required to achieve the protection of wetlands. NEMA establishes a framework for an integrated approach. A number of the NEMA principles address integration, decision-making and intergovernmental cooperation.\textsuperscript{75} Chapter 3 of NEMA describes procedures for co-operative governance and implementation through environmental implementation plans and management plans by relevant national departments and organs of state\textsuperscript{76} with the intent to achieve coordinated, integrated and informed decision making.\textsuperscript{77} NEMA further provides for notices to address non-compliance and the use of conflict resolution.\textsuperscript{78}

The assessment of activities which may have a detrimental impact on the environment has been an important tool to limit activities which impact on wetlands. The Minister of Environmental Affairs is provided with powers to consider regional environmental issues and limit activities in sensitive areas?.\textsuperscript{79} Such decisions would be supported and informed by geographical information. Regulations have been published for the establishment of environmental management frameworks \textsuperscript{80} which promote sustainable development, environmental protection and co-operative governance.\textsuperscript{81} The procedures for environmental impact assessment are laid out in the Act\textsuperscript{82} and regulations which include lists of activities which require environmental

\textsuperscript{74} Section 2(4)r “Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure”.

\textsuperscript{75} Section 2(4)b integration and Section 2(4)k in a transparent manner and Section 2(4)l intergovernmental co-ordination.

\textsuperscript{76} Section 11.

\textsuperscript{77} Section 12,13,14,23.

\textsuperscript{78} Section 16(1-5); Section 17 fair decision making and conflict management; Section 18 conciliation.

\textsuperscript{79} Section 24(2A), 24(3) NEMA; Section 23, 27 Environment Conservation Act 73 of 1989.

\textsuperscript{80} Environmental Management Framework Regulation GNR 547 in GG 33306 of 18 June 2010, Guidelines for the implementation of Environmental Management Frameworks GN806 in GG 35769 of 10 October 2012. These provide for regional/geographical planning and inform decision making through other tools such as environmental impact assessments.

\textsuperscript{81} Section 2(3)(a),(b),(c) Environmental Management Framework regulations.

\textsuperscript{82} Section 24 NEMA; Section 21 Environment Conservation Act.
authorisation prior to commencement. A listed activity may not commence without an environmental authorisation and there are consequence for doing so which include ceasing the activity, remediation and submission of an application. In the case of an incident, measures are prescribed for the responsible person and the authorities to avoid any further pollution or damage to the environment. If such an incident is an emergency the authorities may allow a person to carry out a listed activity without an authorisation.

Compliance and enforcement remain key components of the command and control regime. Every person has a duty of care to avoid pollution or damage to the environment and can be issued with a directive to cease activities and remediate. The requirements of NEMA and Specific Environmental Management Acts (SEMAs) are enforced through the establishment of an environmental management inspectorate in the three spheres of government across national departments. The inspectors must monitor and enforce compliance and have the powers to inspect, request information and issue compliance notices, seize items and to stop and search. NEMA provides for any person to seek relief for any breaches of the act in their own interest or of the public. The magistrates’ court has jurisdiction to prosecute but severe cases can be referred to the National Prosecuting Agency. If an offence is committed penalties of up to R 10 million or imprisonment or both can be

83 Environmental Impact Assessment Regulations.
84 Section 24(f).
85 Section 24(g).
86 Section 30 Control of incidents.
87 Section 30A.
88 Section 28(1),(2),(3).
89 Section 28(4),(5),(6) NEMA; Section 31A Environment Conservation Act.
91 Section 31B Environmental Affairs; Section 31BA Water Affairs; Section 31BB Mineral Resources; Section 31C a MEC. Regulations were published to ensure that the inspectors are appropriately trained and qualified for their duties. Regulations relating to qualification criteria, training and identification of, and forms to be used by, environmental management inspectors. GNR 494 in GN 28869 of 2 June 2006.
92 Section 31G,31H,31K.
93 Section 31L.
94 Section 31J.
95 Section 32,33.
96 Section 34.
imposed. Several SEMAs have been implemented to support the framework environmental management act. The acts that are relevant to water resources and the protection of wetlands are discussed in more detail below.

2.1.3 Land use planning regime

Land use planning and development impacts on the wetlands and ecosystem services whether it be urban, rural or agricultural land. Historically land use planning law in South Africa was modelled according to apartheid policies and resulted in a fragmented and cumbersome legal framework. The Development Facilitation Act complemented by various other laws was promulgated in 1994 to address inequalities of the past and provide a set of principles to facilitate planning, integration and decision making. The Local Government: Municipals System Act and some land use planning ordinances provide structure for planning through the development of integrated development plans and spatial development frameworks but there remained conflicts to achieve development and protection of the environment.

---

97 Section 49A offences, Section 49B Penalties, Section 29 and 30 Environment Conservation Act.
98 Environmental Conservation Act, National Water Act, NEM Protected Areas Act, NEM Biodiversity Act, NEM Integrated Coastal Management Act, the World Heritage Act.
99 Glasewski Environmental Law in South Africa 9-6.
101 Such conflicts have played out in court for example Wary Holdings (Pty) Ltd v Stalwo (Pty) Ltd and Another 2009 (1) (CC) Johannesburg Metropolitan Municipality v Gauteng Development Tribunal and Others 2010 (2) SA554 (SCA); City of Cape Town v Maccsand(Pty)Ltd and Another 2010(3) SA 63 (WCC) Maccsand(Pty) Ltd and Another v City of Cape Town and Others 2012 (4) SA 181 (CC) 2012 JOL 2869 (CC).
102 Preamble Development Facilitation Act reflects its purpose is to speed up the reconstruction and development programme. Section 23, 24 and 25 of Municipal Systems Act requires that municipalities develop integrated development plans which are aligned to provincial and national planning laws. Section 4,5 and 6 Western Cape Land Use Planning Act 3 of 2014 requires the development of spatial development frameworks which include the requirement to include Section 4(3)(C)(ii) biodiversity, ecological, provincial tourism, heritage and agricultural resources, socio economic development and efficient use of resources. Section 7,8 and 9 provide that the Minister may adopt provincial regional spatial development frameworks, Section 7(2)(a) provide a spatial vision that strives to balance economic, social and environmental considerations. Section 22 requires every local municipality (in the Western Cape) to adopt a single zoning scheme.
The Spatial Planning and Land Use Management Act (SPLUMA) replaced several acts\(^{103}\) and provides a more holistic framework for spatial planning and land use management in South Africa.\(^{104}\) SPLUMA recognises the need for sustainable development,\(^{105}\) protection of agricultural land,\(^{106}\) and environmental management legislation and management.\(^{107}\) It requires each sphere of government to develop spatial development frameworks\(^ {108}\) and national government to develop regional spatial development frameworks\(^{109}\) and to introduce aligned regulations and by-laws.\(^ {110}\) It provides for procedures and processes through land use schemes and land development applications recognising existing provincial legislation and requiring alignment.\(^ {111}\) The geographical information that is required informs the existence and extent of wetlands which is then included into planning decisions at all spheres of government. SPLUMA requires provincial government to monitor the compliance of municipalities with respect to municipal and provincial legislation.\(^{112}\)

---


\(^{104}\) Section 3 objects of the Act.

\(^{105}\) Section 7(b)(iii).

\(^{106}\) Section 7(b)(ii).

\(^{107}\) Section 7(b), 12(1),(m),(n),24(2).

\(^{108}\) Section 5(1),(2),(3) categories of spatial planning for municipal, provincial and national, Chapter 4 spatial development frameworks, section 12, 13, 15, requires national, provincial and municipalities to prepare spatial development plans, provisions for this process and co-operative governance.

\(^{109}\) Section 18.


\(^{111}\) The Western Cape Land Use Planning Act is generally aligned with SPLUMA in terms of IDP’s and spatial development frameworks. Some provinces have draft legislation Mpumalanga Planning Bill 4 March 2013, Gauteng Planning and Development Bill 2012 Final Draft November 2012, Limpopo Spatial Planning and Land Use Management Bill 2012, Kwa Zulu Natal Planning and Development Amendment Bill 2013 and Eastern Cape Planning and Development Bill 2012. According to Glazewski several provinces still rely on existing legislation. The existing legislation is not aligned to SPLUMA, Eastern Cape Planning Ordinance 15 of 1985, Free State rely on the Township Ordinance Amendment Act 10 of 1998, Gauteng, Limpopo, North West and Mpumalanga rely on the Town Planning and Township Ordinance 15 of 1986 (Tranvaal)and Northern Cape rely on the Northern Cape Planning and Development Act 7 of 1998.

\(^{112}\) Section 5(2),10.
National planning departments are responsible for making and reviewing policies and laws and monitoring and supporting other spheres of government. The Minister of Rural Development and Land Reform has the accountability in terms of SPLUMA to ensure co-operative governance and has the responsibility to prescribe procedures in cases where there is conflict or inconsistencies.\(^\text{113}\)

Municipalities are responsible for the development and implementation of a single land use schemes applicable to their area,\(^\text{114}\) which includes categories of land use zoning and regulations,\(^\text{115}\) zoning maps,\(^\text{116}\) procedures and conditions relating to zones,\(^\text{117}\) taking cognizance of environmental management instrument and authorities\(^\text{118}\) and give effect to integrated development plans and strategic development frameworks.\(^\text{119}\) SPLUMA also makes provision for land use and development incentives.\(^\text{120}\) However the incentives are not defined.

It is an offence not to comply with the provisions of SPLUMA. Penalties include imprisonment and fines.\(^\text{121}\) Similar penalties are found in provincial legislation and include the right to enforce provisions of zoning schemes and issuing directions to cease activities.\(^\text{122}\)

2.1.4 Fresh water regime

The National Water Act (NWA) protects wetlands through various pathways supported by the National Water Resource Strategy (NWRS).\(^\text{123}\) It is binding

---

\(^{113}\) Section 5(3),9,18 SPLUMA.
\(^{114}\) Section 23(1)(a),(b).
\(^{115}\) Section 24(2)(a).
\(^{116}\) Section 25(2)(b).
\(^{117}\) Section 25(2)(a).
\(^{118}\) Section 24(2)(b).
\(^{119}\) Section 24(2)(g).
\(^{120}\) Section 24(2)(e).
\(^{121}\) Section 58(2) may be sentenced to imprisonment for a period not exceeding 20 years or a fine in terms of the Adjustment Fines Act 1991 or both.
\(^{122}\) Section 74(2),(3),(4) Western Cape Land Use Planning Act.
\(^{123}\) Section 5,6,7 its development is a requirement of the National Water Act and its purpose is to give effect to the implementation of the National Water Act.
on all bodies and institutions tasked with implementation of the NWA.\textsuperscript{124} The strategy relies on a strong institutional structure to deliver on the requirements stipulated in the NWA, including the establishment of Catchment Management Agencies, regional water utilities and water user associations.\textsuperscript{125}

The NWRS identifies key principles to enable water resource protection. These principles are effected by the NWA. Principles relevant to wetland protection and the use of PES include the classification of the resource based on the regulated classification process\textsuperscript{126} to classify major rivers, wetlands and aquifers, \textsuperscript{127} commitment to a participatory approach to water resource protection, and the importance of the value of water resources from an economic, social and environmental perspective. Incentive based protection of the water resources\textsuperscript{128} requires an integrated protection and management of aquatic ecosystems.\textsuperscript{129} This is supported by the NWA measures to determine the reserve, \textsuperscript{130} prevent pollution\textsuperscript{131} and emergency incidents.\textsuperscript{132}

The NWA designates the Minister of Water Affairs and Sanitation as the national trustee of water for South Africa.\textsuperscript{133} Key to executing the Minister’s mandate is the establishment and operation of Catchment Management Agencies (CMAs).\textsuperscript{134} Each CMA is required to put together a strategy\textsuperscript{135} which

---

\textsuperscript{124} Chapter 2 part 1 preamble National Water Act.
\textsuperscript{125} National Water Resource Strategy2 Chapter 8 institutional arrangements 9.
\textsuperscript{126} Regulation for the establishment of water resources classification system GNR 810 in GG 33541 of 17 September 2010. These regulations provide procedures for determining the classes of water, determining the reserve and determining resource quality objectives.
\textsuperscript{127} National Water Resource Strategy2 43, National Water Act Chapter 3 provides for the protection of water resources. Part 1 Section 12 prescription of classification system, part 2 section 13 classification of water resources and resource quality objectives, part 3 the reserve which provides for basic human needs and ecological reserve. Section 16 and 17 provide for the determination of the reserve.
\textsuperscript{128} and states that “To manage the quality of water resources and protect the ecosystems, the waste discharge charge system must be used as an instrument to improve the quality of the degraded rivers wetlands and aquifers.”
\textsuperscript{129} National Water Resource Strategy2 43.
\textsuperscript{130} Section 3 procedure for determining the reserve, Regulations for Establishment of the Classification System.
\textsuperscript{131} Section19 provides the authority to direct the owner of the land or person causing pollution to cease an activity causing pollution, prevent pollution from continuing and remediate.
\textsuperscript{132} Section 20.
\textsuperscript{133} Section 3.
\textsuperscript{134} Section 80 are accountable to realise the requirements of policies, strategies, the NWA, the Water Services Act and guidelines and standards within their allocated jurisdiction.
\textsuperscript{135} Section 8,9,10 include the establishment, content and guidelines for catchment management strategies.
considers the class of the water resource, water quality objectives, the
requirements of the reserve and international obligations.\(^\text{136}\)

The establishment of a CMA must be carried out in a formal manner with public
participation\(^\text{137}\) and includes the appointment of a governing board.\(^\text{138}\)

In 2005 the first NWRS\(^\text{139}\) proposed nineteen CMAs only eight of which were
established, and had limited success.\(^\text{140}\)

To accommodate administrative and financial requirements the DWS in 2012 proposed only nine CMAs,\(^\text{141}\) four of
which have been formally established\(^\text{142}\) and a fifth is being established.

In line with the provisions of the Constitution, water services and sanitation are
the competence of local authorities. Municipalities take on the role of a Water
Services Authority. Water Boards may also be established to provide services
to other service providers, but the accountability remains with the local
authority.\(^\text{143}\)

The Water Act requires that all water use must be licensed.\(^\text{144}\)

Water use is broadly defined and includes any activity which could have a detrimental
impact on a water resource including activities which would impact negatively
on a wetland.\(^\text{145}\)

There is provision for existing lawful use and regulations for
a process to register all water uses.\(^\text{146}\)

---

\(^\text{136}\) Section 9(a),(c).
\(^\text{137}\) Section 77,78.
\(^\text{138}\) Section 81.
\(^\text{140}\) Glasewski Environmental Law in South Africa 16-15, 16-26.
\(^\text{141}\) The proposed nine new CMAs are Limpopo, Olifants, Inkomati-Usuthu, Pongola–Umzimkulu, Vaal, Orange,
\(^\text{142}\) Establishment of the Limpopo–North West CMA in terms of section 78(3) of the National Water Act GN 409 in
GG37674 of 23 May 2014; Establishment of the Pongola–Umzimkulu CMA in terms of section 78(3) NWA
GN411 in GG37676 of 23 May 2014; Establishment of the Breede-Gouritz CMA through extending the boundary
and area of operation of the Breede Overberg CMA in terms of section 78(4) of the NWA GN 412 in GG 37677 of
23 May 2014; Establishment of the Olifants CMA in terms of Section 78(3) of the NWA GN 168 in GG 38492 of
27 February 2015; Proposal for the establishment of the Vaal River CMA in terms of section 78(3) of NWA GN
107 in GG 38478 of 20 February 2015.
\(^\text{143}\) Glasewski Environmental Law in South Africa 16-37.
\(^\text{144}\) Chapter 4 Water Use, Part 1 General Principles. In general all water uses must be registered unless they are
listed in schedule 1, is an existing lawful use or is covered under General authorisation.
\(^\text{145}\) Section 21(C),(l) impeding or diverting the flow of water in a water course, altering bed, banks, course or
characteristic of a water course.
\(^\text{146}\) Section 26(1)(c) National Water Act, Regulations requiring that a water use be registered GNR1352 in
Water and wetlands know no boundaries. The NWA makes provision for regional water issues to be managed in a formal manner through international agreements administered and implemented through bodies appointed by the Minister.\textsuperscript{147}

Using alternative mechanisms such as PES for the protection of wetlands requires funding. The CMAs are authorised to raise funds required to effectively carry out their duties through money appropriated by parliament, water use charges and funds obtained through any other lawful process.\textsuperscript{148}

Provision is made for the financing of water services and the development and implementation of strategies to protect water resources through water use charges.\textsuperscript{149} The pricing strategy can include funding of a range of activities including monitoring, water resource protection and conservation.\textsuperscript{150} Water use charges may be made within specific water management areas or on a regional basis\textsuperscript{151} and such charges may be payable to relevant water management institutions.\textsuperscript{152} However, a person paying for water and sanitation in terms of the Water Services Act may not be charged for the above services.\textsuperscript{153} No charge made in terms of the NWA may be a tax, levy or duty.\textsuperscript{154}

Regulations which provide for the financial assistance to resource-poor farmers specifically exclude financial assistance for water resource management.\textsuperscript{155}

As with NEMA the NWA makes provision for penalties for various offences including water use without a required license, failure to comply with conditions of water use license and failure to comply with directives.\textsuperscript{156} Non-compliance

\textsuperscript{147} Section 102 Establishment of bodies to implement international agreements.
\textsuperscript{148} Section 84.
\textsuperscript{149} Section 56.
\textsuperscript{150} Section 2(a)(i–v).
\textsuperscript{151} Section 57.
\textsuperscript{152} Section 57(2).
\textsuperscript{153} Section 57(4).
\textsuperscript{154} Section 57(5).
\textsuperscript{155} Section 3(2)(a) regulations on financial assistance to resource poor farmers GNR1036 in GG 30427 of 31 October 2007.
\textsuperscript{156} Section 151(1).
is a criminal offense and penalties can be up to R 10 million or ten years imprisonment or both.¹⁵⁷

2.1.5 The biodiversity regime

The linkage between biodiversity, water resources and wetlands is increasingly acknowledged as an area which requires more attention, specifically the dependencies of wetlands and biodiversity upon each other has grown as a focal point.¹⁵⁸ South Africa has national legislation which covers protected areas,¹⁵⁹ biodiversity ¹⁶⁰ and cultural heritage.¹⁶¹ Each province has legislation aimed at conservation of protected areas. Administration at provincial level exists in those provinces which have established agencies or boards.¹⁶² The Minister of Environmental Affairs is

¹⁵⁷ Section 151(2).
¹⁵⁸ Secretariat Natural solutions for water security. Montreal.
¹⁵⁹ National Environmental Management: Protected Areas, National Forests Act 84 of 1998, Environmental Conservation specifically limited development areas but no such areas have been declared to date; Glasewski Environmental Law in South Africa 12-40; Marine Living Resources Act 18 of 1998 and Sea Birds and Seals Protection Act 46 of 1973.
entrusted with the overall protection of the environment supported by various national\textsuperscript{163} and provincial\textsuperscript{164} authorities.

The objectives of the National Environmental Management: Biodiversity Act (NEMBA) provide for the management and conservation of biodiversity within the framework of NEMA and the protection of species and ecosystems.\textsuperscript{165} The act defines the general powers and responsibilities of SANBI and its governance by a board.\textsuperscript{166}

NEMBA provides for integrated planning and monitoring of the status of biodiversity\textsuperscript{167} through the use of the National Biodiversity Framework (NBF)\textsuperscript{168} which was completed and published.\textsuperscript{169} The framework is informed by the National Biodiversity Assessment (NBA)\textsuperscript{170} and National Biodiversity Strategy and Action Plan (NBSAP).\textsuperscript{171} Enhancing terrestrial and aquatic ecosystems are identified as strategic objectives.\textsuperscript{172} In support of this and as required in terms of the act, Biodiversity Management Plan (BMP)\textsuperscript{173} norms and standards have been published as Biodiversity Management Plans for Ecosystems (BMPE)\textsuperscript{174} through which the Minister can enter into Biodiversity Management

\textsuperscript{163} South African National Parks responsible for national parks prescribed in Chapter 5 of Protected Areas Act, South African National Biodiversity Institute responsible a very broad range of issues from international conventions, scientific aspects, oversight of protected areas other than national parks, programmes for the protection of ecosystem as prescribed in Chapter 2 of National Biodiversity Act, Minister of Department of Agriculture, Forestry and Fisheries is responsible for forests reserves and wilderness. South African Heritage Resources Agency is responsible for heritage resources.
\textsuperscript{164} Provincial environmental departments and in some provinces specific conservation bodies such as Cape Nature, Ezemvelo KZN Wildlife, Mpumalanga Tourism and Parks Agency and North West Parks and Tourism Board.
\textsuperscript{165} Section 2(a)(i)(IA)(c),(d).
\textsuperscript{166} Sections 10,11,12, part 2 Sections 13–22 Governing board, composition and membership, part 3 sections 23–27 and part 4 28–32 administration of institute.
\textsuperscript{167} Section 37(a),(b).
\textsuperscript{168} Section 38,39 the preparation and contents of National Biodiversity Framework.
\textsuperscript{169} South Africa’s National Biodiversity Framework 2008 GN 813 GG 32474 3 August 2009. The purpose of the framework is to co-ordinate and align the efforts of the organisations involved in conservation of biodiversity in South Africa.
\textsuperscript{170} The second National Biodiversity Assessment was published in 2011.
\textsuperscript{171} Department of Environmental Affairs and Tourism South Africa’s national biodiversity and action plan 2005.
\textsuperscript{172} National Biodiversity Strategy and Action plan.
\textsuperscript{173} Section 43 National Biodiversity Act
\textsuperscript{174} Norms and Standards for Biodiversity Management Plans for Ecosystems (BMPE) GN 83 GG 37302 7 February 2014. The BMPE is published and legally binding.
Agreements. These in turn can form part of bioregional plans, Integrated Development Plans (IDPs) Strategic Development Frameworks (SDFs), Environmental Management Frameworks and Catchment Management Strategies and Plans. Monitoring and reporting the status of biodiversity is required; the Minister reports annually to parliament and ensures information is publically available.

The Minister may publish a list of ecosystems which are threatened, affording them added protection. A National List of Ecosystems which require protection has been published. Once listed such areas gain additional protection through environmental impact assessment processes and through inclusion into IDPs and SDFs. Although the promulgated National List focuses on terrestrial environments, with the intent to publish a list for freshwater, estuarine and marine environments at later stage, the threatened areas that have been listed invariably include wetlands. These wetlands would be very much part of the ecosystem and critical to maintaining the integrity of the ecosystem. The NBF strategic objectives include integration of biodiversity into fiscal policy specifically mechanisms that allow for payment for ecosystem services.

Alien invasive vegetation in South Africa threatens aquatic ecosystems and hence requires duty of care of landowners to take steps to control invasive species and prevent harm to biodiversity. Invasive species control plans must be developed and implemented in protected area and state owned

---

175 Section 44 These agreements can be linked to the management of protected areas or stewardship programmes in terms of Protected Areas Act.
176 Section 40 the minister may determine geographic regions and publish a plan for the management of biodiversity.
177 Section 49.
178 Section 49(2)(a)(b).
179 Section 52 (1).
180 National list of ecosystems that are threatened.
181 Section 53(2) National Biodiversity Act Section 24 National Environmental Management Act listing notice activity 12.
182 Section 54 requires listed ecosystems to be included into environmental plans in terms of chapter 3 of National Environmental Management Act and IDP’s in terms of Municipal Systems Act.
183 National Biodiversity Act National List of Ecosystems which are threatened.
184 National Biodiversity Framework 43,44.
185 Section 73(2).
land. Regulations and a list of alien invasive species have been published.

The intent of the National Environmental Management: Protected Areas Act (NEMPAA) is to provide for the protection of ecosystems through co-operation and management of protected areas. NEMPAA must be read and applied in conjunction with NEMBA specifically in terms of the planning tools referred to above, including the NBF, NBSAP, NBA and BMPs. NEMPAA, supported by regulations encompasses conservation, biodiversity and ecosystem services.

Management or co-management of protected areas is implemented through the appointment of suitable persons; for national parks is assigned to the South Africa National Parks. Management is formalised through management plans and performance indicators. Restrictions are enforced in protected areas.

A person who contravenes or fails to comply with NEMBA or NEMPAA or provisions of regulations is liable on conviction to a fine not exceeding R 5

---

186 Section 76(1).
187 Alien and invasive species regulations 2014 GNR 598 GG37885.
188 Alien and Invasive Species list 2014 GN 599 GG 37886.
190 Section 9 protected areas include special nature reserves, national parks, natural reserves (including wilderness areas) protection areas, world heritage sites, marine protected sites, special protected forests, forest nature reserves, and wilderness areas declared in terms of the Forest Act, mountain catchment areas declared in terms of the Mountain Catchment Areas Act.
191 Section 6 of National Biodiversity Act.
192 Regulations for the proper administration of nature reserves 8 February 2012 GNR 99 GG 35021, Regulations for the proper administration of special nature reserves, national parks and world heritage sites GN R 1061 in GG28181 of 28 October 2005, Biodiversity policy and strategy for South Africa strategy on buffer zones for national parks GNR 106 in GG 35020 of 8 February 2012.
193 Glasewski Environmental Law in South Africa 14-4.
194 Section 42.
195 Section 39,40,41.
196 Section 43.
197 Section 45 access to special nature reserves, Section 46 Access to national park, nature reserve and world heritage site, Section 48 restriction on prospecting and mining, Section 48A restricted activities in marine protected areas.
million or R 10 million for a second offence and imprisonment not exceeding 10 years or both.\textsuperscript{198}

2.1.6 Coastal management regime

South Africa’s coastline stretches over approximately 3200 km\textsuperscript{199} and includes many sensitive ecosystems, estuaries which provide flood control, unique habitat for fish nurseries and materials for subsistence. South Africa has approximately 300 estuaries,\textsuperscript{200} 79\% of which are threatened.\textsuperscript{201} The National Environmental Management: Integrated Coastal Management Act (NEMICMA) determines the coastal zone, provides for the management of the coastal zone and the protection thereof in public trust for future generations\textsuperscript{202} and is implemented within the framework of NEMA.\textsuperscript{203} The coastal zone is well defined into several areas;\textsuperscript{204} the coastal protection zone encompasses an area of up to 1 km from the high water zone in those areas zoned agriculture, undetermined or unzoned,\textsuperscript{205} and any coastal wetland, lake or lagoon.\textsuperscript{206} The purpose of the coastal protection zone is to protect property that plays a significant role in the coastal ecosystem.\textsuperscript{207} Provision is made for the management of estuaries, requiring the Minister of Water Affairs to publish an estuarine management protocol,\textsuperscript{208} which has been done.\textsuperscript{209} Institutional arrangements are prescribed in the form of a national,\textsuperscript{210} provincial,\textsuperscript{211} and

\begin{footnotes}
\item[198] Section 98(2) National Biodiversity Act contravenes regulations, Section 101 National Biodiversity Act offences: failure to comply with provisions of the act and permits. Section 102 National Biodiversity Act, penalties, Section 89 Protected Areas Act offences and penalties.
\item[200] National Biodiversity Assessment 83 states that the St Lucia estuary accounts for almost 50\% of estuary land cover in South Africa, despite being part of a World Heritage site it remains in poor condition.
\item[201] National Biodiversity Assessment 83.
\item[202] Section 2 Integrated Coastal Management Act.
\item[203] Section 5.
\item[204] Section 7–25.
\item[205] Section 16(d).
\item[206] Section 16(f).
\item[207] Section 17.
\item[208] Section 33,34.
\item[209] National Estuarine Management Protocol.
\item[210] Section 35,36.
\item[211] Section 38,39,40.
\end{footnotes}
municipal agencies, functions and committees. The act prescribes the requirement for national, provincial and municipal coastal management programmes which must be aligned with environmental management plans, IDPs and SDFs, the NBF and the national estuarine management protocol. Various regulatory mechanisms are prescribed including special management areas, coastal zoning schemes, and controls activities which will have an adverse effect on the protection zone. The Minister can issue a coastal protection notice if a person is carrying out or intending to carry out an activity which will have an adverse effect on the coastal environment or instruct the repair or removal of structures which may have an adverse effect on the coastal environment.

Non-compliance offences are divided into four categories, with category one being the most severe. Penalties can range from up to R 50 000 for category four offences to R 5 million for a category one offence and can include sentencing a person to community service.

2.1.7 Agricultural regime

Agricultural land in South Africa is limited due to geophysical characteristics such as mountains, desert and large areas with limited water resources. The Conservation of Agricultural Resources Act (CARA) is the primary act

---

212 Section 42.
213 Section 44,45.
214 Section 46,47.
215 Section 48,49.
217 In terms of Chapter 3 of NEMA.
218 In terms of SPLUMA and relevant provincial ordinances.
219 Section 59.
220 Section 60.
221 Section 79 offences, Section 80 penalties.
222 Draft Preservation and Development of Agricultural Land Framework Bill GN 210 GG 38545 13 March 2015 “South Africa consists of 122 million hectares of land of which approximately 13% is regards as high value agricultural land 21.
223 Conservation of Agricultural Resources Act 43 of 1983.
controlling natural resources in the agriculture sector. CARA’s objective is the sustainable use of agricultural resources, conservation of soil, water sources and vegetation, combating weeds and invader species and matters related to these. In terms of section 6 of CARA, the Minister may prescribe control measures with respect to the utilisation of vleis, marshes, water sponges, water courses and water sources. The measures prohibit cultivation of virgin soil, protect land against erosion through the action of water, and protect vleis, marshes, water sponges and water courses. One may not without written permission drain or cultivate a wetland or interfere in a water course within ten meters of the flood line. The flow pattern of runoff water (the diversion of water) is regulated and must protect the veld.

The Department of Agriculture, Forestry and Fisheries (DAFF) develops and publishes a strategic plan. The most recent plan covers the period 2013/14 to 2017/18. Sustainable environmental management is identified in the plan as a strategic outcome with various goal statements including sustained management of natural resources and increased contribution to the sector to economic growth and development. No reference is made to the protection of wetlands. DAFF acknowledges that in the previous plan agro-ecological agriculture was recognised as needing urgent attention but little progress has been made and they are engaging with the United Nations for assistance. There is limited recognition for the potential lack of water resources. Linkages to the LandCare programme, which includes Working for Water (WfW) and Working for Wetlands, is discussed but the focus of the plan

---

224 Section 3.
226 Section 2 Conservation Agriculture Resources Act.
227 Section 4.
228 Section 7(1) prohibits the use of vegetation in a wetland, Section 7(2) control of vegetation in a water course, Section 7(3)a,b CARA regulations.
229 Section 8(1) CARA regulations.
230 Section 9 CARA regulations.
231 Strategic Plan for Department of Agriculture, Forestry and Fisheries 2013/14 to 2017/18.
232 Draft Agro-ecosystem is defined.
233 Strategic plan for DAFF 41.
234 Strategic plan for DAFF 4.
is on job creation rather than the natural resource benefits. In March 2015, DAFF published a draft Preservation and Development of Agriculture Land Framework Bill (PDALFA) for comment. PDALFA provides a framework for classifying land according to agricultural potential, rezoning, subdivision and retaining high potential cropping land. Municipalities must provide input into applications for rezoning or change in high potential cropping land taking into consideration IDPs and SDFs and other relevant planning frameworks. Improved strategic planning is provided for through mandatory agriculture sector plans and spatial agricultural plan. Incentives may be provided by the Minister (DAFF) out of money appropriated by parliament primarily to ensure food security but includes activities which meet the objects of the Act, for example promoting long term viable farming units from an economic, environmental and social perspective.

Penalties for offences in terms of CARA are relatively minor compared with those found in SEMAs, in accordance with which fines of up to R 10 000 and prison not exceeding four years may be imposed.

2.1.8 Fiscal regime

The use of market-based instruments, which enable economic and social growth while achieving the protection of the environment, has been increasing internationally in the past few decades. In 2006 South Africa published a draft policy paper: A Framework for Considering Market Based Instruments to Support Environmental Fiscal Reform in South Africa (MBI draft policy). The

---

236 Strategic Plan for DAFF 5.
237 Draft Preservation and Development of Agriculture Land Framework Bill.
238 Section 52.
239 Section 10.
240 Section 56(2)(a–c).
241 Section 56(d).
242 Section 2(b)(iv).
243 Grieber T. (editor) Payment for ecosystem services, legal and institutional frameworks IUCN Environmental law centre. Gland Switzerland viii; Paterson Environmental Compliance and Enforcement in South Africa 308.
MBI draft policy recognises the role that market-based instruments can play in sustainable development.\textsuperscript{245} It focuses on environmental taxes and charges for the purpose of raising revenue and meeting environmental objectives with the focus being on raising revenue.\textsuperscript{246}

There are several environmental taxes in the form of user charges which cover the costs for planning and implementation of water management and resource allocation and will eventually fund the Catchment Management Agencies; the water resource development and use of water works charge covers the cost of infrastructure development and maintenance to ensure the quality and quantity of supply; and the water research fund levy is used to fund the Water Research Commission.\textsuperscript{247}

Mining has a significant impact on wetlands, especially open cast mining. Tax incentives are provided when setting up a trust fund for rehabilitation, supported by specific rules which ensure that the incentive is only allocated for monies spent on mine closure and not during operations.\textsuperscript{248} This is supported by requirement in the Minerals and Petroleum Resources Development Act\textsuperscript{249} to make financial provision for rehabilitation after mine closure.

The MBI draft policy explores various market-based instruments which would support environmental objectives. These include exempting or providing tax incentives to conservation groups who carry out restoration projects; the implementation of the Discharge Charge System which promotes a reduction in the release of effluents; and the allocation of tax monies received to environmental initiatives rather than straight into the fiscus for normal budgetary purposes.

\textsuperscript{245} Market Based Instrument for Fiscal reform in South Africa viii States that environmental related taxes can play an important role in helping to ensure economic growth are sustainable and discourage activities that impose high social costs from an environmental perspective.

\textsuperscript{246} Market Based Instruments for Fiscal reform in South Africa 39.

\textsuperscript{247} Market Based Instruments for Fiscal reform in South Africa table 1 executive summary and 37.

\textsuperscript{248} Market Based Instruments for Fiscal reform in South Africa 37; The Income Tax Act 58 of 1962 as amended provides, through a special rehabilitation fund, tax incentives for mining operations to set aside funding or reserves for mining rehabilitation”.

\textsuperscript{249} Income Tax Act.
The Tax Act\textsuperscript{250} provides for financial incentives linked to provisions in NEMBA and NEMPAA to encourage private land owners to carry out conservation activities for public good.\textsuperscript{251} Conservation areas can be established in terms of the Protected Areas Act and there are a formal set of rules which must be followed. If the land owner complies with the requirements as agreed in the management programme with the relevant authorities, deductions can be claimed based on expenditure and the value of the land. There is also a breach clause in which monies can be recouped if there is non-compliance with the conditions of the management plan.\textsuperscript{252}

In terms of the Local Government Municipal Properties Rates Act as amended, rebates and reductions which could be claimed for protected areas are no longer permitted.\textsuperscript{253}

### 2.2 An analysis of the current legal regime governing wetlands

The Constitution sets the basis for environmental decision-making specifically through the environmental right and various other rights relevant to water, food, property and thus provides an adequate platform for a legal regime governing wetlands. This platform is reinforced through the objectives of NEMA which gives effect to the environmental right and co-operative governance to address the concurrent roles of each sphere of government provided for in the Constitution\textsuperscript{254} and defines the principles which all organs of state are compelled to adhere to and implement.\textsuperscript{255} NEMA provides the necessary framework within which the responsible organs of state at a national, provincial and local level can and have enacted legislation for the

\textsuperscript{250} Income Tax Act as amended Section 37B,37C,37D.
\textsuperscript{251} Paterson Environmental Compliance and Enforcement 300
\textsuperscript{252} Generally Paterson A 'Considering Recent Developments in Environmental Fiscal Reform in South Africa,' (2009) SAJELP.
\textsuperscript{253} Local Government: Municipal Properties Rates Act 6 of 2004 S8 (2) (o), Municipal Property Rates Amendment Act 29 of 2014 S6 and S13(e) protected areas was removed from categories qualifying for differential rates
\textsuperscript{254} Kidd M., Environmental Law 32; Paterson Environmental Compliance and Enforcement in South Africa 12,13.
\textsuperscript{255} Section 2(1)(a),(b),(c),(d) the principles apply throughout the Republic to the actions of all organs of state that may significantly affect the environment.
protection of wetlands. The legislation provides for integrated planning, monitoring and reporting based on clear scientific baselines.\textsuperscript{256}

Notwithstanding the above there are areas which require intervention. This section provides a synthesis of the strengths and weaknesses in the current legal regime regarding the protection of wetlands.

Institutional capacity is key to ensure that legislation is appropriately implemented to achieve compliance, protection of the natural environment and to enable alternative instruments. There are numerous institutions which through the legal regime have jurisdiction over wetlands.\textsuperscript{257} Their roles and responsibilities are laid out in the relevant legislation, in particular with respect to co-operative governance, establishment of relevant committee and forums with specific decision making power and responsibilities as discussed in part 1 of this chapter. Nevertheless, it is evident when considering the regime legislation related to wetlands that the protection of water resources is vulnerable due to the lack of effective implementation of the legal requirements including co-operative governance.\textsuperscript{258}

A key mechanism to achieve the objects of the NWA is the establishment of CMAs to achieve localised and focused water resource management including carrying out scientific studies and engaging with various stakeholders which would support effective decision making within the catchment.\textsuperscript{259} However, only eight of the nineteen CMAs proposed in the first NWRS were formally constituted and deemed to be partially successful.\textsuperscript{260} In response to this, the NWRS 2013 proposed the consolidation of the nineteen CMAs into nine, but

\textsuperscript{256} Glasewski Environmental Law in South Africa 1-28 emphasises the need to integrate science into the development of law and decision making.
\textsuperscript{257} Glasewki Environmental Law in South Africa 16-33 Minister of Environmental Affairs, Minister of Water, Catchment Management Agencies once established, Minister of Agriculture, Minister of Rural Development and Planning, Provincial MEC’s, Municipalities.
\textsuperscript{258} Paterson Environmental Compliance and Enforcement 117-125 States that good governance and improving institutional capacity (human and structures) is provided as a key opportunity to improve environmental management and protection.
\textsuperscript{259} National Water Resource Strategy2 59 – 64, Section 72, Section 73 and schedule 3 National Water Act, powers that may be exercised and duties to be performed by Catchment Management Agencies on assignment or delegation.
\textsuperscript{260} National Water Resource Strategy2 64; Glasewski Environmental Law in South Africa 16-26.
only four of these new CMAs have been established and they are not yet fully functional. Functioning and effective CMAs would provide for more focused protection of wetlands.

Agriculture is by far the largest user of water (60%) followed by urban (18%), mining (5%), rural (4%), afforestation (3%) and power generation (2%).

While every sector is important, the extent of land use and water use by agriculture would indicate a need to focus on this area to mitigate the negative impact on wetlands. Sustainable environmental management is identified in the DAFF strategic plan, as a strategic outcome with various goal statements including sustained management of natural resources and increased contribution to the sector to economic growth and development. However no reference is made to the protection of wetlands. There is limited recognition in the strategy for the potential lack of water resources and hence no actions to address water quality and quantity. There are linkages to the LandCare programme which includes WfW and Working for Wetlands but the focus of the plan is on job creation rather than the natural resource benefits.

Planning is provided for in the legal regimes discussed in part 1 of this chapter. There are strong linkages reflected in the acts which require informed and integrated decision making. Examples are the requirement in NEMA for relevant organs of state to develop environmental implementation plans and environmental management plans and an environmental outlook report and the requirement in NEMBA for a National Biodiversity Framework informed by the NBA. The NBSAP also makes reference to the planning tools provided for in SPLUMA such as IDPs and SDFs and their linkage to bioregional plans and Catchment Management Strategies. Another example is the BMPs required in terms of NWA.

There are several plans required in terms of legislation which specifically provide for the protection of wetlands, including the National Protected Areas

---

261 National Water Resource Strategy (figure 2.9) 9.
262 Strategic plan for Department of Agriculture Forestry and Fisheries 41.
263 Strategic plan for DAFF 5.
264 Section 11(1)(2).
Expansion Strategy, coastal zoning schemes, national, provincial and municipal coastal management plans and the National Estuary Biodiversity Plan. However, the development of plans has been slow; and monitoring the effectiveness of such plans is required.

The South African legal regime compels government departments to establish a sound scientific baseline which will support the protection and effective management of wetlands and estuaries. Regular monitoring and reporting is included into legal requirements. NEMA requires regular assessments and reporting of the state of the environment. In terms of wetlands and estuaries the NBA is informed by in depth assessments including National Wetland Inventory, national wetland classification system which formed part of the National Freshwater Ecosystem Priority Area project and National Estuary Biodiversity Plan.

NEMA provides for integrated environmental management. Permits and licenses are key tools which give effect to this requirement. Environmental authorisations and water use licenses are two key permitting regimes which effect the protection of wetlands and activities which may impact on wetlands. These are supported by various planning permits which are compelled to consider broader environmental aspects such as mining, development and zoning applications across South Africa. Water Use Licenses have to some extent included requirements which are broader than mitigating impacts related to the project including the requirement to allow for the movement of aquatic species, to rehabilitate the riparian habitat to sustain a bio diverse riparian ecosystem and to identify and demarcate all wetlands occurring on the property. However, effective implementation is being hampered by institutional failures. For example the DWS has failed in a number of cases to

---

265 Paterson Environmental Enforcement and Compliance acknowledges the importance of the scientific community toward compliance and enforcement.
267 Eskom Holdings Limited Matla power station Water Use License November 2013.
issue licenses timeously, resulting in some cases in delays in development, but in others industries have ignored the legal requirement and have continued with existing operations or established new ones.268

Closely linked to authorisation is monitoring compliance to conditions and the enforcement of the law in cases of non-compliance. The relevant acts define non-compliance as an offence and provide the authority to government departments to take the necessary enforcement action, including administrative and criminal actions in the form of fines, notices for remedial action and imprisonment. South Africa has seen an increase in instilling compliance through the inclusion of requirements for reporting, monitoring and auditing in environmental authorisations, water use licenses and management plans for protected areas to name a few. There has been an increase in enforcement since the establishment269 of the environmental management inspectorate in 2003.270

SPLUMA271 and CARA272 make provision for the use of incentive measures and to a limited extent the ability to collect and spend monies collected for specific purposes. NWA provides for incentives273 and allows CMAs274 to raise and administer funds through water use charges and monies appropriated from parliament for resource protection. The DAFF Minister can provide incentives to meet the objects of PDALFA.275 The Tax Act also provides for incentives to be paid for conservation activities under NEMBA and NEMPAA.

---

268 National Water Resource Strategy2 70 “The DWA has largely removed the backlog of licence applications that has been delaying legal water use over a number of years”.

269 Paterson Environmental Compliance and Enforcement 88,89.

270 Department of Environmental Affairs National Environmental Compliance and Enforcement Report 2013/14 (2014) 1,3 indicate an increase in the number of inspectors, inspections, criminal action taken and fines issued.

271 Section 24(e) includes land use and development incentives.

272 Section 8(2)

273 Chapter 5 part 1 water use charges will be used as a means of encouraging reduction in waste and provision is made for incentives for effective and efficient water use. Section 56(6)(b) may consider incentives and disincentives.

274 Section 84(1),(2)(a),(b),(c).

275 Section 7.4 financial and other incentives is to be made available to farmers, Section 5.16 DAFF will establish an incentive scheme.
2.3 Conclusion

The integration of planning frameworks across the different government departments is provided for and is further entrenched as legislation is revised, such as SPLUMA which came into effect in 2015, the revision of provincial ordinances to align with SPLUMA and PDALFA which includes the requirement to incorporate existing planning tools for decision making in agriculture. However, there are challenges regarding the implementation of co-operative governance and limited institutional capacity. Further DAFF, who has a major role to play toward the protection of wetlands has not identified this as a key issue in terms of programmes for compliance and enforcement. Notwithstanding the short comings highlighted above the current legal regime does make sufficient provision for the protection of wetlands and yet wetlands are the most critically endangered ecosystem in South Africa. The continued decline in the status of wetlands points to weaknesses and opportunities. First, the continued focus on command and control mechanisms\textsuperscript{276} and secondly, the introduction of approaches which incentivise the private sector to become more committed and involved with sustainable development mechanisms.

While there is provision in legislation to facilitate the use of incentives, it is limited in its use and does not provide a framework within which incentive measures such as payment for ecosystem services can be effectively implemented.

\textsuperscript{276} Paterson Environmental Compliance and Enforcement 332 the use of market-based instruments will, in most cases not be successful without the support of command and control mechanisms.
CHAPTER 3
THEORETICAL ASSESSMENT OF PAYMENT FOR ECOSYSTEM SERVICES

This chapter considers what is theoretically required for the successful implementation of PES for the protection of wetlands, taking into consideration case studies and legal frameworks, with a specific focus on Costa Rica. Prescriptive regulation (command and control) establishes rules and provides a basis for responsible environmental management. However, the rules are not always effectively implemented and enforced and the value of the control is frequently not aligned to the value of the ecosystem being protected.\footnote{The Environmental Management Inspectorate has carried out many inspections at Eskom sites, the findings are predominantly administrative in nature and are not focused on reducing pollution but rather on whether a report was submitted on time. Camden Power Stations Pre Compliance Notice August 2012, Matimba Power Station Pre-Compliance Notice 15 October 2012.}
PES, a market-based instrument is a complementary form of regulation which, if implemented appropriately, could achieve a more sustainable solution for the conservation of South Africa’s wetlands.\footnote{Greiber Payment for Ecosystem Services 2.}
The market value of a product determines what society is willing to pay for it. Society generally does not attach the real value to ecosystem services and there is an unwillingness to pay for their protection.\footnote{Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 40, 42; ESN Thompson volume 17 464}
Several studies have shown that “non-use” values add the most environmental benefit and often are more than the economic value of agriculture or urban use.\footnote{Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 35. Secretariat Using ecosystem service approaches to inform real world decisions, Ecological Economics Introduction.} The economic value and the value of a public good are not mutually exclusive.\footnote{Market Based Instrument for fiscal reform in South Africa draft policy defines a public good as having two qualities, it is non-rival and non-excludible. Non rival means that one individual use of the good does not reduce another’s ability to consume the goods. Non excludible means that it is impossible to prevent individuals from benefitting from the good.}
based mechanisms are regarded as successful if the value of an ecosystem is reflected in price signals and in decision making.\textsuperscript{282}

### 3.1 What is payment for ecosystem services?

Payment for Ecosystem Services (PES) is a market-based instrument which facilitates the payment by a beneficiary to a landowner or intermediary parties for activities which achieve enhanced ecosystem services, for example sustaining the integrity of a wetland to provide for the natural purification of water. The beneficiary can be industry, private parties or organs of state who would benefit from the action of the landowners or intermediary parties.\textsuperscript{283}

Determining the value of an ecosystem can take some time. However, it is relatively easy to determine the value of wetlands compared with built infrastructure such as a water treatment plant or pipeline. For this reason PES has been most frequently applied to water related ecosystems, for example the protection of forests to sustain catchments and the changing of agricultural activities to improve the quality of water and or to enhance biodiversity.\textsuperscript{284}

The principle is that land owners or farmers who provide an ecosystem service are paid a market related value for the service by those who benefit from the service.\textsuperscript{285} Unlike liability instruments which are based on the polluter pays principal, PES is based on the beneficiary pays principle.\textsuperscript{286} However, in order for PES to work both parties must benefit. The landowner or intermediary party and the beneficiary should benefit more by carrying out the conservation

\textsuperscript{282} Smith S., Rowcroft P., Everard M., Couldrick L., Reed M., Rogers H., Quick T., Eves C., and White C. Payment for Ecosystem Services: A best practice guide Defra London.

\textsuperscript{283} Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 6 “what makes PES a PES is that in any payment arrangements those who pay are aware that they are paying for an ES which is valuable to them or their constituencies – and those that receive the payments engage in meaningful and measurable activities to secure the sustainable supply of ecosystem services in question.

\textsuperscript{284} Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 43,44.

\textsuperscript{285} Wunder S., and Wertz Nanounikoff S. Payment for Environmental Service: Guidance Paper for the Scientific and Technical Advisory Panel “PES are best suited for promoting conservation on private lands but can in certain conditions be applied to public lands.”

\textsuperscript{286} Smith et al Payment for Ecosystem Services: A best practice guide; Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 42.
activities than they would have by existing activities such as agriculture and water treatment.\textsuperscript{287}

A PES scheme can consist of just two parties, the buyer who benefits from an ecosystem service and seller who provides the ecosystem service. As a scheme becomes more complex it is likely to require an intermediary who assists with negotiations and administration and specialists in the various different fields of expertise, including legal, land, financial, resource assessment and stakeholder engagement.\textsuperscript{288} Payment can be made for direct benefits received or for management activities which will result in the ecosystem benefits.

There are various PES schemes:\textsuperscript{289} public payment schemes in which government pays providers of ecosystem services on behalf of the public, private payment schemes in which beneficiaries contract directly with the ecosystem service provider and public-private payment schemes which draw funds from both government and private funding, for example funding from the Global Environmental Fund. There can be two levels of buyers, a direct purchaser who is benefitting from the ecosystem service and organisations or government who purchase services on behalf of the public. Water related PES schemes are generally local given that upstream activities impact a limited part of a catchment. In cases where government is the purchaser, the funds would be provided by the fiscus and hence the public.\textsuperscript{290}

There are various approaches to PES schemes but generally they can be described by the phases shown in figure 1.\textsuperscript{291}

\textsuperscript{287} Smith et al Payment for Ecosystem Services: A best practice guide 17
\textsuperscript{288} Smith et al Payment for ecosystem services: A best practice guide 20.
\textsuperscript{289} Smith et al Payment for Ecosystem Services: A best practice guide 1, Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 6.
\textsuperscript{290} Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 59 provides as an example of this the PES scheme for improving water provisioning in Moyobamba Peru.
\textsuperscript{291} Smith et al Payment for Ecosystem Services: A best practice guide; Sukhdev et al The Economics of Ecosystems and Biodiversity Challenges and responses 10 refers to the stepwise approach for appraising natures benefits steps one to three reflect processes in this figure.
In the first phase parties agree that there is a problem to solve; for example the degradation of a wetland is resulting in erosion and deteriorating quality of water. Following an affirmative to the first question, it must be established that the rehabilitation of the wetland would reduce erosion and improve quality of water downstream. Phase three confirms providers of the ecosystem service can be identified and downstream users or government would be identified as the beneficiary of the service. While the first three steps seem simple they must be supported by relevant scientific and technical information. The PES Best Practice Guide uses the example of the Upper Neuse River Watershed of North Carolina in which a beneficiary analysis was completed identifying several institutions who would benefit from improved ecosystem services. Further it must be confirmed which landowners can carry out activities which provide the ecosystem service. Once confirmed, contracts can be put in place.

---

292 Smith et al Payment for Ecosystem Services: A best practice guide 41 list of technical issues include how much buyers are willing to pay, payment is for management practices or ecosystem services delivered, timescales to commit funds, scientific baselines available or required, contract arrangement, ownership rights.
The final phase, monitoring, measuring and reporting the delivery of ecosystem services and their benefits, is key to ensuring that the scheme is successful and both parties remain involved and committed.  

3.2 Advantages and disadvantages of PES

PES focuses directly on the enhancement and protection of ecosystem services and encourages broader participation by parties who otherwise would not have been exposed to the benefits which their activities could have on a sustainable future. The consideration and implementation of PES and other market-based instruments create awareness and opportunities to improve on environmental policy where it is not adequate and achieve cross compliance. It encourages the consideration of tradeoffs and measuring the effectiveness of existing policies.

In developing countries there is potential to alleviate poverty through creating purpose and innovation to poor communities who otherwise may not have progressed. Those who benefit from sustainable practices are made aware of their importance and are involved in identifying offsite solutions which are likely to be more cost effective or have broader benefits to society.

The providers of ecosystem services are also subject to regulations which require them to carry out practices which already reduce the impact on these services, such as eliminating alien vegetation or managing a wetland to ensure the provision of clean water for themselves. PES could result in dysfunctional management of land in order to realise the financial benefits which may be

---

294 Smith et al Payment for Ecosystem Services: A best practice guide 31,32,33; Government Payments for Ecosystem Services 200
295 Porras Learning from 20 years of Ecosystem Services in Costa Rica 49 the programme was effective in increasing participation and allocating funds to individuals owning smaller pieces of land.
296 Porras Learning from 20 years of Ecosystem Services in Costa Rica 51 compliance improved in some areas such as resolving land tenure, gender benefits and that PES participants do not have any debt.
297 Barton et al Ecosystem Services and Natural Capital, 463.
298 Kronenberg Could payments for ecosystem services create an “ecosystem services curse”? 10.
offered by the beneficiaries. Payment to landowners to carry out that which many consider a moral obligation could be viewed as a conflict.

3.3 Theoretical legal prerequisites for implementing PES schemes

Implementing a successful PES scheme needs to take into consideration a broad range of environmental, social and economic aspects. This section provides an overview of formal and informal regulatory mechanisms.

3.3.1 Enabling policy and legal framework

A sound legal framework can contribute to the successful establishment of a public PES scheme. It is not always essential for a private scheme but it provides a level of certainty which encourages participation. For the purposes of this analysis the legal framework is unpacked into five key components required for a sound PES for the conservation of wetlands.

First, the need for policy which incorporates holistic water management principles. The importance of policy and market forces was demonstrated in Costa Rica where poor policy and financial incentives led to rapid deforestation from more than 50% to less than 20% percent of land cover due to the conversion of forest to agriculture. There were three aspects which

---

299 An example of this is cited in the Costa Rica case study where landowners were removing forests in order to benefit from reestablishing them.
300 Porras Learning from 20 years of Ecosystem Services in Costa Rica 24 refers to rules in use for PES systems which include formal rules including legislation and regulations and informal rules developed by communities and participants over time.
301 FONAFIFO lessons learnt for REDD+ 5 key lesson, political and institutional context is very important. Provide a clear institutional framework that facilitates inter-sectoral cooperation.
302 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks xiii,13,14.
303 Porras Learning from 20 years of Ecosystem Services in Costa Rica 8 states “From covering 70% of the country in 1950, forests declined to just 20 per cent by 1987; Bennet K, Henninger N. Payment for Ecosystem Services in Costa Rica and Forest Law No.7575 Key lessons for legislators World Recourse Institute on behalf of e parliament; Russi et al The Economics of Ecosystems and Biodiversity for Water and Wetlands Case Enabling the legal framework for PES, Costa Rica 1 “more than half of Costa Rica was covered by forest in 1950. This was drastically reduced to 29 percent by 1986”.


contributed to the deforestation: from 1930 to 1940 titling\textsuperscript{304} (land tenure) laws rewarded deforestation; from 1950 to 1970 the population doubled; and there was high international market prices for agricultural products such as beef, coffee and sugar.\textsuperscript{305} Costa Rica has turned this situation around with the introduction of an evolving policy and legal framework which started with their Forest Act No. 4475 in 1969, providing for tax incentives for reforestation, the prohibition of raw forest products being exported and restrictions on importing of forest products, and continued with the Forest Law No. 7575 in 1996 which incorporated the Costa Rica PES scheme.\textsuperscript{306}

Establishing policy which covers holistic water management is only complete if it is inclusive of legislation related to the protection of wetlands. For example the protection of wetlands must extend into agriculture. In Costa Rica the legal focus was on forestry but recognised ecosystem services derived from forestry, including carbon sequestration, water quality, energy production linked to the protection of catchment areas and ecotourism. \textsuperscript{307} Other jurisdictions have specifically implemented agriculture policies which encourage landowners specifically in the agriculture sector to improve land management practices, specifically those related to water resources and wetlands.\textsuperscript{308}

\textsuperscript{304} Wikipedia, accessed 01 May 2015, description of land titling is a form of land reform which private individuals and families are given formal property rights for land which they have previously occupied informally or used on the basis of customary land tenure.

\textsuperscript{305} Porras et al Learning from 20 years of Ecosystem Services in Costa Rica 8.

\textsuperscript{306} Porras et al Learning from 20 years of Ecosystem Services in Costa Rica 8,9.

\textsuperscript{307} Bennet et al Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 4 Forest Law 7575 Article 4; Porras et al Learning from 20 years of Ecosystem Services in Costa Rica 12.

\textsuperscript{308} Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the community action in the field of water policy. http/www.ec.europa.eu, accessed 17 August 2014 The intent when developing the Water Framework Directive was to expand the scope of water protection to include surface and groundwater, improve the status of rivers through ecological and chemical controls, the river basin approach, a combined approach which focuses on water treatment at source considering technology constraints and the receiving environment; Barton et al Ecosystem Services and Natural Capital 19, UK Department for Environment, Food and Rural Affairs, Government Decisions on cross compliance www.gov.uk Common Agriculture Policy, consultation outcome, last accessed 23 July 2015; Daily G.C., Zhigun O., Hua Z., Shuzhuo L., Yukuan W., Feldman M., Karieva P., Polasky S., Ruckelhaus M. Securing Natural Capital and Human well-being: Innovation and Impact in China. 1 “Among nations China stands out at the nexus of environment and human development with highly innovative and far reaching policies, in terms of goals, scale and duration”. China has implemented a programme which will lead to the protection of important ecosystems by considering the important linkage with human well-being through ecosystem function conservation areas. There have been several PES systems
Secondly, policy needs to be supported by regulations and rules which are easy to administer. In Costa Rica, the Forest Law No. 7575 of 1996 provided for disincentive, banning deforestation combined with a penalty of imprisonment for non-compliance, and an incentive of introducing payments for reforestation. These two primary catalysts for changes were combined with a comprehensive set of rules developed over time. These included eviction of squatters, exemption from taxes, buffer zone regulations to restrict activities close to river ecosystems, an annual presidential decree on the allocation of funds, allocation quotas per region and registration of title deeds. It also contained very specific rules related to qualifications, monitoring and disqualification or discontinuation. The law provided for the creation of a financing fund, flexible finance mechanisms and their administration.

There are several approaches in other jurisdictions which support the creation of rules, linking these with conditions for direct payment such as compliance to mandatory standards and legislation. These rules are introduced in China over the past decade: the Sloping Land Conversion Programme and the Natural Forest Conservation Programme as well as the Paddy Land Dry Land programme all of which have proved to be successful.

---

309 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks xiii. “Efficient and effective legal frameworks for PES demand compatibility with indirectly relevant laws in order to avoid further barriers for watershed PES initiatives; 15 If legislators do not find the right balance between creating legal certainty and simplicity they will compromise the creation of a market.

310 Porras et al Learning from 20 years of Ecosystem Services in Costa Rica 8.

311 Porras et al Learning from 20 years of Ecosystem Services in Costa Rica 25; Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 4.

312 Burnett Summary of Forestry Act 7575 Costa Rica, Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators article 22 “The Certificate for Forest Conservation (CCB) is created to reward the owner or holder for those environmental services…….” “The value of the certificates, the conditions that owner who benefit from them must comply with and the areas for incentives, will be determined in the regulations.” “The fact that these benefits apply to the property must be registered in the public registry by the deadline established by the relevant regulations.” Article 26 Prohibition, “The export of timber pieces or logs without bark from forests is prohibited.” 3.

313 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 4, Summary of Forestry Act 7575 Costa Rica (Articles 46, 47, 48, 49 and 51) 13.

314 Other jurisdictions include the UK, China and the USA.

315 Council regulation (EC) No73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers. The European Commission refers to cross compliance as “a mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in good agricultural and environmental conditions.”
comprehensive and provide detailed controls and mechanisms to support the implementation of the payment schemes, and include sanctions for non-compliance.  

Thirdly, the inclusion of the correct pricing signals and incentives within the policy and regulations. In Costa Rica the Forest Law No. 4475 of 1969, provided tax incentives for activities aimed at reforestation. The Reforestation Act of 1977 stipulated that state commercial banks were to allocate 2% of agricultural loans to forestry at a low interest rate. In 1990 the introduction of Forest Laws No. 7032 and No. 7174 provided for further financial incentives through the use of certificates. Up to this point the incentives had mostly benefited large companies, but the introduction of Forest Bond Certificates allowed for the payment of direct subsidies and Forest Protection Certificates encouraged forest conservation, allowing enrolled land to be used for ecotourism. The Forest Law No. 7575 provided for the establishment of a PES programme which enabled government to contract with land owners for their services. This law simultaneously created the National Forest Financing Fund and provided for other financing from tax revenue, grants and loans from national and international institutions.

Fourthly, flexibility in direct and related policy and regulations. The Costa Rica success is based on provision in the law for PES but also the ability for a semi-autonomous agency FINOFIFO to introduce guidelines and to operate independently and implement other policy decisions such as the water tariff.

---

316 http://www.ec.europa.eu. Integrating environmental concerns into the CAP – Agriculture and rural development. Accessed 17 August 2014; Department of Agriculture published the 2014 Agricultural Act which includes control and incentive mechanisms for the protection of wetlands. In terms of this Act producers may not continue with agriculture activities on wetland systems or converted wetland without authorisation and they may not convert a wetland. Compliance to the wetland conservation provision allows producers to be eligible for commodity, disaster and conservation programmes.

317 Burnet Summary of Forestry Act 7575 Costa Rica article 22; Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 1,2.

318 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 2,3.

319 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 4 “FINOFIFO is a semi-autonomous agency that is legally independent and serves as the implementing agency and financial hub for the PES programme.”
and terms of contracts with participants. \(^{320}\) Social aspects are a key component of any PES scheme specifically in developing countries. Costa Rica introduced several instruments to encourage and ensure social benefits and participation of lower income individuals. These included prioritisation of areas with low social development, reducing overall transaction costs, tax incentives and confirmed income, prioritising funds to smaller land owner and diversifying the ecosystem service provided, for example moving from forest protection to agroforestry. \(^{321}\)

Lastly, the willingness to change the approach when there are indications of failure. Costa Rica’s legislation transformed from the first Act in 1969 to the most recent in 1996, starting out as a tax incentive and moving towards a payment to citizens for conserving and enhancing natural capital. After twenty years there is a move toward more holistic management which focuses on quality rather than quantity and incorporates eco-tourism, local economies and agriculture. \(^{322}\)

3.3.2 Governance and institutional capacity

Implementing a PES scheme requires participation at all levels of government, private sector, NGOs and local beneficiaries. Good governance is therefore essential. \(^{323}\)

According to Greiber there is not one winning formula for how institutions need to be set up, but how institutions, participants and other stakeholders are able

\(^{320}\) Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 7,8.

\(^{321}\) Porras Learning from 20 years of Ecosystem Services in Costa Rica 42-49.

\(^{322}\) Porras Learning from 20 years of Ecosystem Services in Costa Rica 10

\(^{323}\) Paterson Environmental Compliance and Enforcement in South Africa 107,108 “A management process executed by institutions and individuals in the public and private sector to holistically regulate human activities and the effects of human activities on the total environment. (including all environmental media, and biological, chemical, aesthetic and socio-economic processes and conditions) at international, regional, national and local levels by means of formal and informal institutions, processes and mechanism embedded in and mandated by law, so as to promote the common present and future interests human beings hold in the environment;” Salzman Designing Payments for Ecosystem Services 6,7.
to interact on informal and formal platforms is critical. Essential components include supporting PES project planning starting with the scope and scientific baseline, facilitating the provision of financial resources, providing for access to information, supporting public participation, enabling capacity building and knowledge transfer, conflict resolution and the enforcement of laws, regulations and contracts. Government institutions at local, provincial and national level all play an essential role in facilitating PES. Water catchment issues are generally local but may in some cases influence national water supply and quality. Knowledge at a local level, in government and private institutions is required for effective implementation. National institutions provide policy and enabling legal instruments.

3.3.3 Scope and scientific baseline

The restoration of wetlands has been relatively successful compared with other ecosystem services. The choice of parameters that are measured will influence the final outcomes and success of the scheme. There are different measures that can be used, for example the land area mitigated, activity completed or the ecological benefits. The choice made will influence the overall success of the scheme.

Ecosystems are complex and can provide multiple benefits. It is beneficial to evaluate the connecting ecosystems and the number of different services which can be provided. This optimises the potential of the scheme and

---

324 Department of Water Affairs and Forestry Strategic framework for water services, Water is life, sanitation is dignity 10 reflects similar criteria for sound institutional capacity including clear roles and responsibilities, involvement of different levels of government and NGO’s. Global Water Partnerships Creating organisations frameworks 7 lists the principles for effective water governance as: open and transparent, inclusive and communicative, policies and action must be integrated equitable and ethical, and for performance and operation: accountability, efficient, responsive and sustainable.


326 De Groot et al Global estimates of the value of ecosystem services in monetary units Introduction states that better accounting for ecosystem services is crucial to improve decision making 1.

327 Restoration of Ecosystem Services 575 “it is important to emphasize that measuring ecological processes is not the same as measuring an ecological service. The former should be based on well accepted scientific methods that provide information on how an ecosystem is performing such as nutrient processing; the latter should be based on the delivery of a final service or good like clean water to humans”
ensures that one ecosystem service is not optimised at the expense or destruction of another.\textsuperscript{328}

The Costa Rica programme pays for activities rather than paying for the actual ecosystem service delivered. Specific activities qualify for payment including tree planting for commercial timber plantations and forest conservation. These in turn contribute to different ecosystem services such as climate change and water availability.\textsuperscript{329}

3.3.4 Source and ownership of resources

The ownership of land and the rights to natural resources is critical to the establishment and success of a PES programme. Land ownership and customary rights influence how a PES is set up.\textsuperscript{330} Conflict may arise regarding who has the right to sell an ecosystem service and if there are customary rights which are not aligned to land mitigation measures. PES may not be possible if ownership of land and natural resources is not addressed by policy, legislation or enforcement measures. Land tenure, while not a prerequisite, provides more stability and possibility of sustainable ecosystem services. PES often has a limited period, and land ownership is beneficial because owners are incentivised to continue with sustainable practices for their own benefit or due to legal requirements. Lack of land tenure does not enable the enforcement of other environmental legal requirements and hence no sustainability.\textsuperscript{331}

As the Costa Rica PES scheme progressed there was an improved understanding of the benefits and shortcomings. Of note is an initial lack of

\begin{flushleft}
\textsuperscript{328} Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 35  \\
\textsuperscript{329} Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575 Key Lessons for Legislators 5.  \\
\textsuperscript{330} Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 32, 49.  \\
\textsuperscript{331} Kronenberg et al Could payments for ecosystem services create an "ecosystem services curse"? 10. Barton et al Ecosystem services and Natural Capital 483, Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 31,32, 33.
\end{flushleft}
focus on the type of land owner who qualified for the scheme and the benefit to the ecosystem. Costa Rican law prohibited payment of public funds to occupants without land titles. This compromised the programme because only private funds could be used to pay such individuals. The Costa Rican law has subsequently changed allowing any funds to be paid to the poor.332

In jurisdictions where land title is not resolved the use of resource rights has been used rather than property rights.333

Other legal mechanisms which encourage participation are the protection of rights. In Costa Rica, participation in PES assured the land owner that illegal occupation of land would not be permitted and trespassers would be forcibly removed.334

3.3.5 Funding and administrating PES

Finding a buyer for an ecosystem service may prove to be the most significant challenge but there are a variety of potential buyers who will benefit from ecosystem services from private landowner, government and businesses.335

In most examples of PES, the largest portion of funding is from the government either through tax benefits or direct payment for ecosystem services rendered. Administrating the funds once received is the second challenge but as important as sourcing the funding. Government could administer PES but often their processes are cumbersome.

Funding for the Costa Rica PES was sourced from Government, the private sector and international banks and agencies.336 Government sourced funding

---

332 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 10.
333 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 33.
334 Porras Learning from 20 years of Ecosystem Services in Costa Rica 51; Payment for Ecosystem Services Getting Started 38.
335 Katoomba Group Payment for Ecosystem Services Getting Started 34 provides a list of potential buyers and how to identify them. Salzman Designing Payments for Ecosystem Services 21.
336 Porras Learning from 20 years of Ecosystem Services in Costa Rica 12.
through dedicated revenues raised from water and fossil fuel taxes. The private sector raised funds through carbon credits and funding from hydroelectric plants. While this portion of funding was less than 3%, it lead to more private contracts and resulted in government increasing the water tax.

Transactions are processed through Certificates of Ecosystem Services; the buyer can choose the ecosystem service they wish to purchase and the geographical area. These certificates are promoted as corporate social responsibility and social investments; this approach has lower transaction cost.

FINOFIFO is set up to administer legal contracts, confirm compliance, receive payment from third parties for ES credits and make payment to landowners delivering the service. According to Poras, 49% of funds were paid to legal entities and 51% was distributed to individuals, cooperatives and indigenous people.

The Costa Rica PES focused primarily on reforestation, however the benefits were bundled and included carbon credits and water resources. The carbon credits extended the scheme to international markets. Funding for the benefits was also obtained from international agencies including the Global Environmental Facility, German Cooperation Bank, the World Bank and Conservation International. While it is beneficial to obtain funding from

---

337 Porras Learning from twenty years of Ecosystem Services in Costa Rica 12,13, 15 states that ten percent of funding comes from seed capital form the German Bank KfW and GEF, ninety percent still comes from state funds. Initial funding came from forestry trusts but mostly from earmarked tax on fossil fuels ......The actual amount transferred to PES annually depends on the tax collected and government priorities.


339 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 6 Ecosystem service certificates (CSA) were sold by FINOFIFO. One CSA funds one hectare of forest in an area.

340 Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 7 and 4 Article 46 of Forest Law No.7575 created the National Forest Financing Fund(FONAFIFO) Executive Decree No 30762 (2002) gives all management of PES to FONAFIFO; Porras Learning from 20 years of Ecosystem Services in Costa Rica 12

341 Porras Learning from 20 years of Ecosystem Services in Costa Rica 20.

342 Porras Learning from 20 years of Ecosystem Services in Costa Rica 12,13,14.

343 Bennett Ecosystem Services in Costa Rica and Forest Law No. 7575 Key lessons learnt for legislators 7.
various sources a large number of sellers in a PES could result in higher transactional costs.\textsuperscript{344}

3.3.6 Qualification criteria

Determining who qualifies to participate in PES is key to ensuring that the areas which are most at risk of degradation and provide the best opportunity for ecosystem service are prioritised. The Costa Rica PES achieved this over time; it progressed from using regional conservation area criteria and ease of qualification to a more focused system based on national priorities, pre applications and meeting specific criteria such as the property size and conservation value.\textsuperscript{345} The Forest Law 7575 referred to participants generally but FINOFIFO developed further mechanisms for qualification and participation and prescribed the process for application and approval. Participants were required to submit an application, supported by several documents including proof of ownership, confirmation that tax payments are up to date, plans to avoid fires and monitoring schedules”. In cases where poor or small landowners wished to join but lacked funds to pay for transaction funds, mechanisms were put in place to collectively contract or NGOs provided the necessary assistance. Provision was also made for the participation of indigenous or poor people who had land tenure but not land title.\textsuperscript{346} Criteria used in other jurisdictions include requirements that landowners must reside on their property, own more than two hectares, be involved in economic agriculture activities and present title deeds.\textsuperscript{347}

In some jurisdictions restrictions are applied to title deeds for activities which may not continue on land such as crop rotation, limiting livestock and fertilising

\textsuperscript{344} Smith Payment for Ecosystem Services: A best practice guide 47; Russi The Economics of Ecosystems and Biodiversity for Water and Wetlands 59,60,61
\textsuperscript{345} Porras Learning from 20 years of Ecosystem Services in Costa Rica 21
\textsuperscript{346} Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 8.
\textsuperscript{347} Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks Brazil case study 97,98,99.
regimes\textsuperscript{348} and qualification for direct payment for implementing activities which benefit the environment. \textsuperscript{349}

3.3.7 Valuation and payment

The valuation of ecosystem services is a key component of PES. It can assist in ensuring that the pricing is appropriate and creates market signals for sustainable practices. \textsuperscript{350} Valuation provides a basis to consider pricing, however measuring the value definitively is often costly and can add unsustainable costs to a PES programme.\textsuperscript{351}

The valuation of ecosystem services will influence decision making and policy development if they are known and mechanisms are found to effectively internalise the cost of ecosystem degradation. \textsuperscript{352}

There are different models for the payment system depending on the nature and scope of the PES. In some cases the payment will be outcomes based (based on the value of the ecosystem service delivered) however, it has been found that a more successful approach is to pay for activities completed (wetland area rehabilitated against a set of criteria). When payment is made will impact on the success of the scheme. Up front capital costs are often required; contracts need to provide for this. Consistent and regular payments will facilitate more willingness to participate.\textsuperscript{353} Most PES programmes in developing countries pay per hectare.\textsuperscript{354}

\textsuperscript{348} Smith Payment for Ecosystem Services: A best practice guide 65,66.
\textsuperscript{349} Common Agriculture Policy England 8 It includes payment of up to 30\% of the annual national ceiling for implementing agricultural practices which are beneficial for the climate and environment. A voluntary payment of up to 5\% of the annual national ceiling is provided for cases where there are natural features preventing farming practices.
\textsuperscript{350} Primmer E., Furman E., Operationalising ecosystem service approaches for governance: Do measuring, mapping and valuing integrate sector specific knowledge systems? 91.
\textsuperscript{351} Porras Learning from 20 years of Ecosystem Services in Costa Rica 18 a study carried out RIMSEC silvo pastoral project developed an ecological index but the costs of monitoring were high because they included satellite imagery, maps and digitized information.
\textsuperscript{352} Determining the economic risk/return parameters for developing a market for ecosystem goods and services Volume 1 iii,iv.
\textsuperscript{353} Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 10.
\textsuperscript{354} Porras Learning from 20 years of Ecosystem Services in Costa Rica 16
3.3.8 Monitoring

Purposeful and effective monitoring is a requisite of PES to ensure that the desired ecosystem service benefit is achieved. Monitoring is required to determine the value of the ecosystem service, to ensure compliance to the rules of the scheme and to ensure compliance to other legislation. However, monitoring itself can significantly increase the cost. Therefore it is essential to find a balance between cost and accuracy.

There were lessons learnt in the early stages of the implementation of the Forest Law 7575 in Costa Rica where the lack of structured enforcement and monitoring led, in some cases, to deforestation in order to qualify for forestation incentives. Monitoring is not specified in the Forest Law 7575 but has been introduced into the scheme through FONAFIFO. There is a requirement for self-assessment by licensed foresters, supported by auditing by external organisations facilitated by FONAFIFO.

There are various forms of monitoring which can be implemented, for compliance to the scheme and ensuring their effectiveness. Establishing a baseline is key to assessing both of the above. First a baseline of the status of the environment which will provide the ecosystem service is required at the start of the project. In some projects, annual assessments have proved to be successful but in others monthly assessments were implemented. Importantly, payment is only made to beneficiaries once the mitigation measures have been confirmed.

---

355 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks 9; Porras Learning from 20 years of Ecosystem Services in Costa Rica 17,18 the RIMSEC study concluded that averaging of valuation data compromised the accuracy of information but addressed the problem of high cost. The RIMSEC project determined the rate of conservation based on annual improvements from a measured baseline. There was improvement of ES but the cost of monitoring was between US$2 and US$10 per hectare. The smaller properties were more expensive to monitor.
356 Porras Monitoring payment for watershed services schemes in developing countries 19.
357 Porras Monitoring payment for watershed services schemes in developing countries 6.
3.3.9 Compliance

There are two aspects of compliance important to PES. First, compliance to legal requirements; secondly, the establishment of rules for the PES programme which aid in incentivising the participants to participate and add the requisite value. These rules can include legal requirements in legislation and regulations and less formal, but still legally binding rules written in a manual, guideline or in contracts. Payment is conditional on complying with the set of rules. The Costa Rica scheme included several rules which contributed to the success of the scheme. For example holders of certificates for forest conservation were exempt from tax on real estate, had protection from people illegally occupying land which belonged to the voluntary PES programme and exempted from paying tax on assets. Payment for reforestation could be made but had to be aligned to technical criteria determined by the Minister of Environment and Energy.

3.3.10 Penalties

Penalties can be introduced through various mechanisms. In private PES programmes the contract would include penalties incurred for non-compliance with the stipulated rules. In public programmes penalties can be enforced by law or through contracts. In Costa Rica, Forest Law 7575 provided for offences and penalties which supported PES and procedures. Penalties for offences include imprisonment, confiscation of goods and a requirement for illegal occupants to be removed. The preference of prison sentences over fines was specifically a successful deterrent.

---

359 Porras Learning from 20 years of Ecosystem Services in Costa Rica 24,25.
361 Burnet Summary of the Costa Rican Forestry Act 7575 Article 24 Voluntary Forest Regeneration.
362 Burnet Summary of the Costa Rican Forestry Act 7575.
363 Porras Learning from 20 years of ecosystem services in Cost Rica (2013) 8, 24 and 25.
3.4 Conclusion

The use of PES has proven in a number of countries to be a successful mechanism to enhance ecosystem services of wetlands. This chapter illustrated the successful implementation of PES in Costa Rica aimed at enhancing biodiversity, adapting to climate change and achieving socio-economic benefits associated with forests. Refining the PES mechanism is an iterative process requiring trial and error and constant adaptation to remain relevant and successful.

It is concluded that there are key elements which must be included in the legal framework.

Holistic management objectives are required to ensure that a benefit to the ecosystem services from the PES scheme does not have a negative impact on other ecosystem services.\textsuperscript{364} The approach should combine a strategic oversight with regional and local implementation addressing key priorities and risk areas.\textsuperscript{365}

The ecological and social benefit added by the PES scheme needs to be monitored and measured and the data collection should be integrated into the administration of the scheme.\textsuperscript{366}

A thorough process of identifying the key role players, those who can provide the ecosystem service and those who will benefit, results in a more successful PES scheme.\textsuperscript{367} While land tenure is an important component of PES it is not

\textsuperscript{364} Porras Learning from 20 years of Ecosystem Services in Costa Rica 62 the Costa Rica PES relied on the protected areas and conservation legal regime.

\textsuperscript{365} Porras Learning from 20 years of Ecosystem Services in Costa Rica 63.

\textsuperscript{366} Porras Learning from 20 years of Ecosystem services in Costa Rica 64,65; Poras Monitoring payments for watershed services in developing countries 19 proposes that compliance to the conditions of the scheme, determining baselines and monitoring of hydrological processes are essential to ensure that payment for watershed projects are successful.

\textsuperscript{367} Salzman Designing Payments for Ecosystem Services 21; Porras Learning from 20 years of Ecosystem Services in Costa Rica 63 determined that people do benefit from PES schemes directly and indirectly and the success of Costa Rica PES was due to continuity of government support and consistency and ease of adapting to change since the establishment of FINOFIFO.
a pre-requisite. The use of broader land use rights can provide effective mechanisms within which the PES can operate.\textsuperscript{368}

Communication and effective engagement is essential to achieve the buy-in from the public, the participants, local communities, NGOs and relevant national, provincial and local government departments. It is necessary to have a framework which role players can understand, including clear and concise policy, acts, regulations and legally binding guidelines. In this regard co-operative governance is especially important to ensure that departments work together to produce legislation which is not contradictory, is prescriptive where required and is relatively simple to implement.

Finding the balance between scientific baselines, monitoring and reporting and keeping transaction costs down is key to an efficient PES. Sufficient knowledge of the value of ecosystem services is important but the appropriate level of accuracy needs only be sufficient enough to influence the market and ensure those who are working towards improving ecosystem services benefit enough to incentivise them to continue doing so, the “Provider gets Principle”. Understanding of ecosystem services is necessary to facilitate the introduction of new policy and legislation.\textsuperscript{369}

\textsuperscript{368} Katoomba Payment for Ecosystem Services Getting Started 39: Porras Learning from 20 years of Ecosystem Services in Costa Rica 63.

\textsuperscript{369} Barton et al Ecosystem Services and Natural Capital 461.
CHAPTER 4

EVALUATION OF SOUTH AFRICA’S LEGISLATIVE FRAMEWORK TO FACILITATE PES

This chapter critically evaluates the extent to which South Africa’s relevant policy and legislative regime contains the essential theoretical legal prerequisites identified in Chapter 3. South Africa’s legal framework is considered by various parties to be aligned with international standards.\(^{370}\) This is evident in the rights in the Constitution, in South Africa’s commitment and writing into law the requirements of these conventions, and in the development and implementation of an environmental legal framework over the past two decades. Despite the progress reflected in Chapter 2, the status of wetlands continues to decline raising the question of whether an alternative mechanism such as PES could be introduced to complement the current legal regime.

4.1 Enabling policy and legal framework

Chapter 3 discussed key aspects required to enable policy and legal framework for PES in five areas. This section assesses how SA’s legal framework matches up to these key aspects.

First, the need for policy which incorporates holistic water management principles. South Africa has a legal framework inclusive of principles which acknowledge the importance of water resource management and in particular wetlands and estuaries.\(^{371}\) There are several policies which cover the protection of wetlands.\(^{372}\)

---

\(^{370}\) Paterson Environmental Compliance and Enforcement in South Africa 331; Glasewski Environmental Law in South Africa 26-56 South Africa has a vast body of law in place to give effect to the Constitutional mandate.\(^{371}\) Constitution, NEMA and SEMA’s as discussed in Chapter 2.\(^{372}\) NWRS2, National Biodiversity Framework, National Biodiversity Strategy and Action Plan, National Biodiversity Estuary Plan, Estuarine management protocol, National Protected Areas Expansion Strategy.
Costa Rica gleaned some success from the integration of PES with protected areas specifically to identify and focus on those areas which were most vulnerable and required focus. In Paterson’s assessment of the new protected areas regime in South Africa he reflects on the importance of planning frameworks and how these have been provided for through NEMBA, NEMPAA and various tools. However his view is that for communal and private landowners there are insufficient incentives to encourage them to play a more active role.

Secondly, policy encouraging the use of incentives needs to be supported by regulations which are sufficiently specific in their focus, but do not create complexity in the legal regime. Various policies refer directly or indirectly to incentives and there has been some progress in terms of fiscal reform. However, there are no regulations, guidelines or central government programmes which provide for the introduction and integration of incentive measures or PES generally or specifically for wetlands.

As reflected in Chapter 2 the agriculture sector is South Africa’s largest challenge and opportunity in respect wetlands and PES. CARA provides for the protection of marshes and vleis through control measures prescribed by the Minister. The control measures include aspects which could facilitate the introduction of PES; examples are money appropriated by Parliament may be granted to land users, maintenance of soil conservation work requirements, advisory committees and mechanisms for penalties for failure.

---

373 Paterson Wandering about South Africa’s new protected areas regime 22 SAPR/L 14, 15, 20, 21.
374 Paterson Wandering about South Africa’s new protected areas regime 17, 32, 33.
375 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks (2009)xiii, 15. “Efficient and effective legal frameworks for PES demand compatibility with indirectly relevant laws in order to avoid further barriers for watershed PES initiatives. If legislators do not find the right balance between creating legal certainty and simplicity they will compromise the creation of a market.
378 Section 6(2)(e) CARA, CARA Subdivision of Regulations Section 7(1-4) provides control measures for marshes and vleis.
379 Section 8(1) CARA establishment of schemes, section 9 provides for provisions and terms of scheme establishment.
380 Section 15 makes provision for Conservation Committees at local, regional and national government which advises on the promotion of conservation of agricultural resources.
or refusal to comply. While CARA makes provision for mechanisms which could be used for PES, it is not specific and has not been used for the establishment of such programmes.

Thirdly the inclusion of the correct pricing signals and incentives within the policy and regulations. South Africa has several taxes which are linked to environmental protection for assets purchased for treatment and recycling and for conservation activities related to biodiversity management agreements in NEMBA and protected areas in NEMPAA. Several user charges have been implemented for example product taxes, transport fuels, aviation fuels, transport taxes and water supply. Some funds are earmarked specifically with regard to water infrastructure and funding of the water research commission but generally funds are not earmarked. The NWA and CARA provide for funds to be raised through the water tariff or through parliament for activities related to resource protection. Unlike other jurisdictions there is not a specific PES programme which is allocated funds, pro-actively engages with landowners and communities and has systems and processes in place to ensure that the functioning of wetlands is improved. The WfW and Working for Wetland programmes have to some extent achieved the above in terms of limiting the impact of alien vegetation on water resources and focusing on wetland rehabilitation.

381 Section 9(2), Section 12(a),(c) and Section 2(1),(3) maintenance of soil conservation works and prosecution for non-compliance.
382 Income Tax Act 58 of 1962 as amended 2014 Section 37B deductions in respect of environmental expenditure including (1) environmental treatment and recycling asset, environmental waste disposal asset; Section 37D deductions in respect of environmental conservation and maintenance carried out in terms of the Section 44 of NEMBA for a period exceeding 5 years and land which is protected in terms of Section 20,23,28 of NEMPAA for a period of 30 years; Section 37D allowances in respect of land conservation in respect of nature reserves or national parks.
383 Market Based Instruments for Fiscal reform in South Africa table 1 executive strategy.
384 Footnote 271,272,273,274.
385 SANBI Factsheet on biodiversity stewardship SANBI Pretoria (2014) The stewardship programme is focused on registering property as a protected area in which case there are several administrative steps and costs involved for the landowner; there are tax incentives and technical support provided; The Working For Water Programme: An Evolution of a Payments for Ecosystem Services Mechanism that Addresses Both Poverty and Ecosystem Services in South Africa.(no date) 6 examples of Hermanus and George municipalities and water utilities, Umgeni Water and Trans Caledon Tunnel Authority which have funded WfW.
386 SANBI Factsheet on biodiversity stewardship SANBI Pretoria (2014) The stewardship programme is focused on registering property as a protected area in which case there are several administrative steps and costs involved for the landowner. There are tax incentives and technical support provided.
Fourth, flexibility in direct and related policy and regulations. As reflected in Chapter 3 Costa Rica allowed for the administration of PES to be carried out by FINOFIFO and integrated social aspects into the scheme. The legal regime provides for the establishment of subsidiary bodies to manage initiatives and there are examples of successful programmes such as the WfW established by SANBI\(^{387}\) and not so successful examples such as the establishment of CMAs.\(^{388}\) The Working for Wetland programme has been successful in implementing co-operative governance between DEA, DWS, DAFF and using funds from the Department of Public Works and has strengthened its institutional capacity through partnering between government and NGOs.\(^{389}\)

Lastly, the willingness to change the approach where there are indications of failure. South Africa has a relatively young environmental legal regime which has evolved since 1994. The legislation is amended on an ongoing basis with a view to address gaps and align with international practices and requirements. There is evidence of moving toward a more integrated legal regime specifically with regard to permitting \(^{390}\) and increasing linkages between the environmental legal regime and land use planning.\(^{391}\)

### 4.2 Governance and institutional capacity

The legal regime governing the protection of natural resources and specifically wetlands makes provision for mechanisms to ensure effective governance including appointed trusteeship of natural resources, clear objectives in each of the relevant acts (as discussed in Chapter 2), institutional capacity, management accountability, conflict resolution and co-operative governance.

\(^{387}\) SANBI Factsheet on biodiversity stewardship.

\(^{388}\) Footnote 140.


\(^{390}\) Section 23 NEMA.

\(^{391}\) Glasewski Environmental law in South Africa 9-43 further integration is required at an institutional level to strengthen the link between environment and planning laws; 11-61 the complexity of NEMICMA makes it difficult for authorities to implement; 12-51 current fragmented legislative and institutional capacity in the protected areas legal regime; 16-38 the challenge remains for administrators, implementers and South Africans to give effect to the Water Act.
There are several Government departments at national, provincial and local level which are allocated accountability for activities which directly and indirectly impact on wetlands, estuaries and water resources in general.\(^{392}\) However effective implementation remains a challenge, due to the diversity and complexity of issues which need to be addressed.\(^{393}\) According to Glasewski the Water Act is unsurpassed in its intent to address and integrate economic, social and natural resources; however the challenge is for administrators, implementers and every South African to realise its intent.\(^{394}\) With respect to NEMICA he raises concern regarding the ability of the various authorities to implement a complex act.\(^{395}\)

The introduction and integration of planning frameworks and tools throughout NEMA and the land use planning, biodiversity, protected areas and coastal management regimes, if implemented by the relevant institutions will lead to more effective protection of natural resources. There are three institutions which could be tasked with the development and implementation of PES; DWS through the CMAs, DEA through SANBI or DAFF through regional and local conservation committees.\(^{396}\)

---

392 Glasewski Environmental Law in South Africa 16-33 identifies DWS, DEA and DAFF at national and provincial government which influence or have decision making authority that could impact on wetlands. In addition to this DMR and Finance at a National level, the planning and development and environmental departments at provincial and local level have influence through the various land use planning and coastal management legal regime as discussed in chapter 2.

393 As discussed in Chapter 2 of this dissertation. In terms of the Constitution the competent authority for water is at a national level while Local government is accountable for governance of local structures and communities, the provision of services in a sustainable manner, promote economic and social development and a safe and healthy environment. There is concurrent competence of national and provincial government. For Agriculture, environment, nature conservation (excluding National Parks, National Botanical gardens and marine), pollution control, regional planning and development, soil conservation and urban and rural development. Municipalities for municipal planning and provincial government for provincial planning.

394 Glasewski Environmental Law in South Africa 16-38.

395 Glasewski Environmental Law in South Africa 11-61.

396 Barton et al Ecosystem Services and Natural Capital 484 refers to conservation districts supporting landowners or alternatively non profit organisations. A CMA, SANBI or Conservation Committees established in terms of CARA could facilitate the establishment of groups of sellers and beneficiaries with combined monitoring, assistance and advice to landowners, creating awareness of the importance of wetlands, how they link within the catchment and determining a value
4.3 Scope and scientific baseline

The legal framework provides for establishing the status of natural resources through various institutions. This information is updated on a regular basis and is incorporated into various protocols and planning mechanisms.\(^{397}\) South Africa completed the National Freshwater Ecosystem Priority Area project and National Estuary Biodiversity Plan\(^{398}\) and continues to improve knowledge of the functioning and importance of wetlands through the Working for Wetlands programme and assessment of the value of ecosystem services provided by wetlands.\(^{399}\) The wetland offset programme initiated by DWS has also led to an increased understanding of the ecosystem value of different kinds of wetlands and the interconnection between wetlands and catchment management.\(^{400}\) South Africa is therefore well positioned to understand which regions are most vulnerable to wetland degradation and to determine the monetary value of these wetlands which would inform the development of a PES scheme.

4.4 Source and ownership of resources

South Africa has and still is undergoing a land reform process which addresses the inequalities of the past. The Constitution and several acts provide for a fair and equitable process for access to food and land.\(^{401}\) The Minister of Rural Development and Land Reform is the trustee of the land reform process. In its 2013/14 Annual Report, the Department of Rural Development and Land Reform reported that “5000 farms, comprising 4.2 million hectares, have been

\(^{397}\) Wetland inventory, BMP E, NBA, bioregional plans, IDPs and SDF’s.

\(^{398}\) Turpie J et al National Biodiversity Assessment 2011; National Estuary Biodiversity Plan for South Africa

\(^{399}\) Anchor Environmental Consultants Report No. AEC 2012/01 Cape Town Report produced for the Council for

\(^{400}\) SANBI Factsheet on biodiversity stewardship SANBI.

\(^{401}\) DWA Sanbi Draft wetland offset best practice guideline.

\(^{401}\) Restitution of Land Rights Act 22 of 1994, Land Reform (labour tenants)Act 3 of 1996, Interim Protection of


and Unlawful Occupation Land Act 19 of 1998, Communal Property Association Act 28 of 1996 and the

transferred to black people benefitting 200,000 families since 1994.\textsuperscript{402} The programmes run by Rural Development and Land Reform include projects which support those who have benefitted from the land reform to develop skills and progress toward food security through various programmes.\textsuperscript{403}

South Africa still needs to finalise the restitution process and communal land tenure. Ownership of communal land remains a challenge with over 17 million rural South Africans not having secure tenure.\textsuperscript{404} This could be a barrier to the implementation of PES in rural areas and would be dependent on securing land use rights through co-operative governance and the introduction of specific PES regulations or guidelines in rural areas through community authorities.

4.5 Funding and administering PES

As with other countries, the funding of PES is one of the most significant challenges. In Costa Rica, the annual president’s decree and funding raised through the water tariff contributed to the success and continuity of the PES scheme. South Africa’s legal framework does provide for funds to be raised.\textsuperscript{405} The Costa Rica approach of using FINOFIFO to administer the PES scheme provided a level of assurance to international funders that funds will be allocated directly to the beneficiaries. It lowered costs of administration and facilitated an efficient process for applications and introducing specific rules for the scheme in line with the Forest Law 7575.\textsuperscript{406}

National Treasury needs to become more active in facilitating access to funding and allocating funds gleaned from various environmental taxes

\textsuperscript{402} Department: Rural Development and Land Reform, Republic of South Africa Annual Report 10.
\textsuperscript{403} Department: Rural Development and Land Reform Annual Report 32.
\textsuperscript{404} Claassen Communal Land, Property Rights and Traditional Leadership Rural Women’s Action Research Programme, Centre for Law and Society, University of Cape Town.
\textsuperscript{405} CARA, CMAs, NWRS, Water Services Act as reflected in Chapter 2.
\textsuperscript{406} Bennett Payments for Ecosystem Services in Costa Rica and Forest Law No. 7575, Key Lessons for Legislators 4 Article 46 of Forest Law No.7575 created the National Forest Financing Fund(FONAFIFO) Executive Decree No 30762 (2002) gives all management of PES to FONAFIFO.
towards wetland rehabilitation. The administration of funds could be facilitated by SANBI, agricultural forums or CMAs at a regional level.

4.6 Qualification criteria

South Africa’s legal framework does not provide any certainty regarding qualification criteria for a PES scheme. There is however sufficient baseline information to inform qualification criteria based on the vulnerability to continued degradation of wetlands and those areas which are essential to provide a continued supply of clean water to the country.  

Qualification criteria would need to be developed prior to rolling out PES schemes within regions or nationally. The following would need to be considered in the development of qualification criteria: socio economic objectives; individual and community land tenure and resource rights; other relevant initiatives linked to capacitating land owners in agricultural practices; and compliance to existing legal requirements linked to wetlands and estuaries. Where contracting is with communities, assurance that a community structure exists within specific legal parameters would be recommended.

The sustainability of these projects is important and therefore it is necessary to confirm that participants are able to contract for a prescribed period. In most cases this is 5 – 10 years. In the case of Costa Rica it was 20 years.

4.7 Valuation and payment

South Africa’s legal framework provides for the establishment of baseline information. There are international and local studies which have estimated

---

407 SANBI Life: State of South Africa’s biodiversity12,17.
408 In terms of NEMA and CARA, land owners have an accountability for the responsible management and restoration of wetlands. Proof of legal compliance to this minimum requirement or an acceptable plan and evidence of implementation would assist in providing the necessary baseline for contracts.
409 Grieber Payment for Ecosystem Services, Legal and Institutional Frameworks.
the value of ecosystem services. However there is not a legal framework which provides for the formal valuation and PES. The following would need to be put in place to facilitate the valuation and payment for a regional or national PES scheme: bundling of ecosystems; methods and frequency of payment; determining the value of wetlands at a local and regional level; local and regional stakeholder issues and cost benefit.

The DEA would need to put in place the relevant regulations. Implementation would require integration and co-operative governance from protected area management committees and authorities, local and provincial planning authorities, agriculture forums and CMAs.

4.8 Monitoring

Monitoring is an essential component of PES, first to ensure the ecosystem service is achieved due to the activities carried out and secondly whether the rules of the scheme have been complied with. Monitoring compliance is a requirement of environmental authorisation and water use licenses. In the case of protected areas there is a requirement for the Management Authority to review compliance to the Conservation Management Plan and report on an annual basis; officials of relevant institutions are permitted to visit sites where authorised activities are taking place and issue directives to rectify

---

411 Blignaut et al Determining the economic risk/return parameter for developing and economic market; Policy Brief Urban Water use 4. “benefits of restoration are not economically viable over a 25 year period for water production alone.” Other services such as water quality, agriculture productivity make the project viable.
412 Willets E., Kramer R., Olander L., Advisors Watershed Payments for Ecosystem Services and Climate Change Adaptation Case Study Rugezi Wetlands, Rwanda table 7 43 payment is not necessarily only made with a cash payment. Some of the options proposed in the Rwandan analysis are periodic or, lump sum cash payments, the provision of food or infrastructure support
413 Willets et al Rugezi Wetlands, Rwanda 7, 17 Proposes that the following are considered in valuation number of ecosystem services, scarcity, importance, are substitutes for ecosystem services available or expensive, number of potential providers of ES, are there new markets for the ES and is land use and watershed service.
414 Environmental authorisations generally require the appointment of an environmental control officer to monitor compliance at appropriate times, this could be daily or monthly depending on the project, there is also a requirement for annual audits or an audit at end of construction.
415 Water use licenses for operations generally require an annual internal and annual external audit.
if non-compliance is identified. Monitoring is provided for in the legal regime and has become common practice in several instances. While in some cases such monitoring could be used to support a PES scheme it is anticipated that specific monitoring requirements would need to be developed and administered. In the development of a monitoring regime for PES the following needs to be considered: cross compliance and use of existing mechanisms; cost effectiveness; frequency; compliance to rules; effectiveness on the ecosystem service; who administers the monitoring and who is authorised to enforce compliance.

4.9 Compliance

As discussed in Chapter 3 there are two aspects to compliance. First, compliance to legal requirements directly, in the forms of the rules of the scheme or indirectly in the form of cross compliance to other legal requirements such as controlled activities in CARA or conditions of water use licenses and environmental authorisations. The Environmental Management Inspectorate has the authority to monitor and enforce the latter with regards to protected areas, environmental authorisations, various permits, biodiversity and water. However, they are not authorised to enforce CARA. The monitoring of compliance of CARA is provided for but does not seem to be active based on their annual report and websites.

4.10 Penalties

In the Costa Rican example the implementation of penalties, specifically a prison sentence and a fine, is seen as an element which contributed to the success of PES. In South Africa, legislation has been amended to increase

---

416 National Biodiversity Assessment, National Estuary Protocol, National Wetland Inventory.

417 Environmental Law in South Africa 26-40,26-41. Department of Environmental Affairs, Department of Water and Sanitation, The Department of Agriculture Forestry and Fisheries, The Provinces various provinces can enforce legislation and local authorities.

418 Footnote 362,363.
the penalties for non-compliance which includes fines\(^{419}\) and there are several examples of criminal prosecution.\(^{420}\)

4.11 Conclusion

The South Africa’s legal regime provides for the protection of wetlands taking into consideration socio-economic, financial and natural resource management. There is integration and alignment between biodiversity, protected areas, land use planning and water legal regimes in the form of framework legislation and the requirement to align with each other’s planning tools. CARA provides for the protection of wetlands but is currently not effectively integrated or aligned with the other legal regimes listed above. PDALFA will address some of the short comings if it is promulgated. Institutional capacity to implement and enforce the current legal regime is an area of concern and is seen by various commentators to be lacking.

Policies and mechanisms exist within the legal regime which can facilitate the continuation of current environmental incentive measures however these are not sufficient to provide for the establishment and effective roll out of PES for the protection of wetlands at a national and regional level. Government would be advised to develop policy and regulations which are specific to PES schemes and their implementation.

Government funding has been made available for programmes such as Working for Wetlands,\(^{421}\) which is a form of PES but does not strictly align with

\(^{419}\) Section 49 B(1),(2) and (3) NEMA fines not exceeding R 5 million to R 10 million or imprisonment not exceeding 10 years or both, Section 102 1,2,2A NEMBA and 3 fine of up to R 10 million and imprisonment of up to 10 year, Section 23 (1) CARA (a),(b) and (c) fines of R 500 to R 10000, 3 months to 4 years imprisonment, Section 151 NWA offences, Section 153 Award Damages and S.154 offences no penalties are prescribed in the NWA, NEM:ICMA S80 (1) to (5) fines up to R 5 million and or imprisonment, also provides for community service for minor offences.

\(^{420}\) National Environmental Compliance Report 2013/14 reported a total of 73 convictions for the 2013/14 period 3 examples of cases which were successfully prosecuted include S v Blue Platinum Venture (Pty) Ltd (t/a Bathlabine Brickyard duly represented by Matome Samuel Maponya in his capacity as director) and Matome Samuel Maponya; r126/13 RC: Harmony gold mining company limited vs Regional Director: Freestate department of Water Affairs and Others 971/12 SCA.

\(^{421}\) Turpie et al The working for water programme: evolution of a payments for ecosystem services mechanism that addresses both poverty and ecosystem service delivery in South Africa.
the criteria which define PES. This is positive in that it shows a willingness to allocate funds to programmes which benefit ecosystem services and human well-being.

There are some institutions which could be tasked with the administration of a PES scheme: for example SANBI, agriculture forums established in terms of CARA and CMAs once established and operating effectively. However Government would be advised to consider setting up a special vehicle such as FINOFIFO for the effective administration of a PES scheme. Moreover formalised policy and regulations focused toward ecosystem services, specifically wetlands, are required to ensure a sustainable future. The DEA, DWS, DAFF and Treasury would be the institutions tasked with the roll out.

There are several issues which would need to be addressed in PES policy and regulations including: raising of funds; ownership of land and natural resources; qualification criteria for participants with a view to encourage emerging farmers; the duration of the scheme to ensure its effectiveness; the integration with the legislative regime discussed in chapters 2 and 4; land reform; and lastly increased enforcement by DAFF and DEA with regard to wetlands.

422 Grieger Payment for Ecosystem Services Legal and Institutional frameworks 6 "What makes a PES a PES is that in any payment arrangement those that pay are aware that they are paying for an ecosystem service that is valuable to them and their constituencies – and those that receive payment engage in meaningful and measurable activities to secure the sustainable supply of the ecosystem service in question."
South Africa has a comprehensive legislative framework, the implementation of which has focused on command and control mechanisms. This has improved the level of environmental duty of care but natural resources have continued to decline in area and quality. Wetlands are South Africa’s most valuable ecosystem but also the most threatened ecosystem, despite an established, albeit relatively young, legislative framework in place to protect and enhance the number and integrity of wetlands. The primary contributors to the decline of wetlands in South Africa are cultivation of land for the production of crops, urbanisation, mining, construction of dams, upstream erosion, water pollution and poor farming practices.

While the focus on command and control forms a basis for the protection of natural resources, the use of complementary mechanisms, such as PES, provide an opportunity for a more holistic approach. The need for incentives is recognised in South Africa’s legal framework but it is not specific and limited progress has been made since initial inclusion of such clauses. The introduction of specific policy and legislation to facilitate the roll out of PES is required. Given that DEA is mandated with environmental framework legislation they would be best placed to develop a PES legal framework with the necessary support for fiscal reform from National Treasury.

There are several government department and agencies which have jurisdiction and responsibility for natural resources and activities which impact on natural resources, but the capacity for these institutions to implement policy and legislation is often ineffective. Agriculture has the greatest impact on water resources both in terms of water use and land use but the legal regime for agriculture is lagging behind that of biodiversity, water and land use planning and is therefore not integrated.
Legislation applicable to agriculture is in place and to a limited extent covers the protection of wetlands. While DAFF acknowledges integration of resource protection and management in CARA and the draft PDALFA bill, specific interventions are required to enable the introduction of PES in agriculture. Currently SANBI is best positioned to initiate a PES scheme, due to their success with working for wetlands and the identification of the need to introduce PES in the NBF.\textsuperscript{423} DAFF and DWS through the CMAs are well placed to be compelled to support SANBI but DAFF remains critical to ensure success.

There are various mechanisms included in the Income Tax Act which are aim at incentivising conservation. National Treasury would be required to review policy to enable raising of funds to provide sustainable support toward a PES scheme. Providing secured funding for an extended period is critical to ensure the PES scheme gains momentum and is sustained. The administration of funds could be through SANBI, CMAs or a special vehicle established for this purpose.

There is sufficient scientific information gathered through the NBA and wetland inventory to initiate a PES scheme which focuses on the most vulnerable wetlands. Further valuation and local information can be developed in parallel with the introduction of a PES scheme.

Qualification to participate in PES needs to be linked to vulnerable ecosystems but needs to take into consideration socio-economic aspects specifically land tenure and use rights. Integration with land reform capacity building initiatives would be mutually beneficial.

An important element of PES is the participation in rural areas and the potential socio-economic benefits to rural communities. Resolution of land tenure in communal areas would provide for the participation of a large part of the population specifically rural communities.

\textsuperscript{423} NBF 43, 44.
Monitoring of compliance mechanisms are in place through various planning processes and permitting tools. These could be adapted to suit a PES scheme. Enforcing existing laws provides a firm basis to enable a fair and equitable scheme and ensure that incentives are not dysfunctional. While this is progressing in most areas, the agriculture sector does not appear to be active. Introducing rules for the PES scheme would need to ensure that cross compliance is achieved, DAFF needs to establish an active enforcement unit. Compliance would need to form part of the qualification criteria.

PES is a market based instrument which has proven to be a successful mechanism in several countries. The Costa Rica case study demonstrated the benefits and opportunities of introducing incentives to encourage the right behaviour of landowners. South Africa is well positioned to introduce a PES scheme to complement the existing legal framework aimed at protecting wetlands specifically using existing vehicles such as Working for Wetlands and developing vehicles such as CMAs and the introduction of the wetland offset policy. A successful programme can be achieved through improved co-operative governance, an increased focus in the agriculture sector and the successful implementation of existing policies and strategies.
BIBLIOGRAPHY

Primary Sources

International Resources Conventions

International Convention of Wetlands of International Importance especially as Waterfowl Habitat. Agreed in February (1971) 22 ILM 698.


International Decisions


Resolution VIII.23 Incentive measures as tools for achieving the wise use of wetlands. 8th Meeting of the Conference of contracting parties to Convention on Wetlands, Valencia, Spain 18-26 November 2002.


United Kingdom Department for Environmental Food and Rural Affairs Government Decision on Cross Compliance June 2014.

International Laws


**Domestic Law**

**Acts**


Conservation of Agricultural Resources Act 43 of 1983.

Communal Properties Associations Act 28 of 1996.

Eastern Cape Parks and Tourism Act 2 of 2010.


Intergovernmental Relations Framework Act 3 of 2005.


Mountain Catchment Areas Act 63 of 1997.

Mpumalanga Tourism and Parks Agency Act 5 of 2005.


Nature Conservation Ordinance (Transvaal) 12 of 1983.

Nature and Environmental Conservation Ordinance 19 of 1974 (Cape).


National Heritage Resources Act 25 of 1999


Northern Cape Planning and Development Act 7 of 1998.


Spatial Planning and Land Use Management Act 16 of 2013.

The Town Planning and Township Ordinance 15 of 1986 (Transvaal).

Township Ordinance Amendment Act 10 of 1998.


Western Cape Land Use Planning Act 3 of 2014.

Western Cape: Nature and Environmental Conservation Ordinance 19 of 1974 (Cape).

Rules and Regulations

Alien and invasive species regulations 2014 in GNR 598 of GG 37885.

Department of Environmental Affairs 2014 National Coastal Management Programme Cape Town.


Establishment of the Breede-Gouritz CMA through extending the boundary and area of operation of the Breede Overberg CMA in terms of section 78(4) of the NWA of GN 412 in GG 37677 23 May 2014.

Establishment of the Limpopo-North West Catchment Management Agency in terms of section 78(3) of the National Water Act of GN 409 in GG 37674 23 May 2014.

Establishment of the Olifants CMA in terms of Section 78(3) of the NWA of GN 168 in GG 38492 27 February 2015.

Establishment of the Limpopo-North West CMA in terms of section 78(3) of the National Water Act GN 409 GG 37674 23 May 2014;

Establishment of the Pongola–Umzimkulu CMA in terms of section 78(3) NWA of GN411 in GG 37676 23 May 2014;

Environmental Management Framework Regulation of GNR 547 in GG 33306 of 18 June 2010.

Guidelines for the implementation of Environmental Management Frameworks of GN 806 in GG 35769 of 10 October 2012.


Environmental Impact Assessment Regulations Listing Notice 1: List of Activities and Competent Authorities identified in terms of S 24(2) and 24D GNR 983 GG 38282 December 2014.
Environmental Impact Assessment Regulations Listing Notice 2: List of Activities and Competent Authorities identified in terms of S 24(2) and 24D of GNR 984 in GG 38282 December 2014.

Environmental Impact Assessment Regulations Listing Notice 3: List of Activities and Competent Authorities identified in terms of S 24(2) and 24D of GNR 985 in GG 38282 December 2014.

National Environmental Management Act 107 of 1998 Regulations relating to qualification criteria, training and identification of, and forms to be used by, environmental management inspectors of GNR 494 in GN 28869 2 June 2006.

National Environmental Management Biodiversity Act, National List of Ecosystems which are threatened and in need of protection of GN 1002 in GG 34809 11 December 2011.


Norms and Standards for Biodiversity Management plans for Ecosystems (BMPE) of GN 83 in GG 37302 7 February 2014.

Proposed new nine water management areas of South Africa of GN 547 in GG 35517 20 July 2014.

Regulations on financial assistance to resource poor farmers of GNRn1036 in GG 30427 31 October 2007.

Regulation for the establishment of water resources classification system of GNR 810 in GG 33541 17 September 2010.

Regulations requiring that a water use be registered of GNR1352 in GG 20606 12 November 1999.

Regulations for the proper administration of nature reserves of GNR 99 in GG 350218 February 2012.

Regulations for the proper administration of special nature reserves, national parks and world heritage sites of GNR 1061 in GG 281828 October 2005.

South Africa Biodiversity policy and strategy for South Africa strategy on buffer zones for national parks 8 February 2012 in GNR 106 of GG 35020.


Draft Legislation


Draft City of Cape Town Coastal Management Programme 2014

Eastern Cape Planning and Development Bill 2012.


Kwa Zulu Natal Planning and Development Amendment Bill 2013.

Limpopo Spatial Planning and Land Use Management Bill 2012.

Mpumalanga Planning Bill 4 March 2013.

Proposal for the establishment of the Vaal River CMA in terms of section 78(3) of NWA of GN 107 in GG 38478 20 February 2015.

Other Government Documents

Biodiversity policy and strategy on buffer zones for national parks of GNR 106 in GG 35020 February 2012.


Department of Water Affairs and Forestry Strategic framework for water services, Water is life, sanitation is dignity (2003)

Strategy for implementing the waste discharge charge system final, DWA, November 2012 (2012).


Cases

Wary Holdings (Pty) Ltd v Stalwo (Pty) Ltd and Another 2009 (1) (CC)

Johannesburg Metropolitan Municipality v Gauteng Development Tribunal and Others 2010 (2) SA554 (SCA);

City of Cape Town v Maccsand (Pty)Ltd and Another 2010(3) SA 63 (WCC)

Maccsand (Pty) Ltd and Another v City of Cape Town and Others 2012 (4) SA 181 (CC) 2012 JOL 2869 (CC)

S v Blue Platinum Venture (Pty) Ltd) and Matome Samuel Maponya; r126/13 (RC).

Harmony gold mining company limited vs Regional Director: Freestate department of Water Affairs and Others 971/12 (SCA).

Secondary Resources

Books


Paterson A., Kotze L.J. (ed) Environmental Compliance and Enforcement in South Africa Legal Perspectives (reprinted 2010)Juta Law

Other Resources


Bennet K, Henninger N. Payment for Ecosystem Services in Costa Rica and Forest Law No.7575 Key lessons for legislators World Resource Institute on behalf of e parliament (no date)


Centre for Law and Society Rural Women’s Action Research Programme Communal and Land Tenure Policy and IPIRLA (2015).

Claassen A. Centre for Law and Society Communal Land, Property Rights and Traditional Leadership Rural Women’s Action Research Programme, , University of Cape Town (2014).


Food and Agriculture Organization of the United Nations, The state of food and agriculture, FAO Agriculture Series No. 38 (2007).

Forest Trends, the Katoomba Group and UNEP, Payment for Ecosystem Services Getting Started: A primer (2008).


Kosonen K. and Nicodeme G. The role of fiscal instruments in environmental policy, European commission (2009).


Paterson A. Pruning the money –tree to ensure sustainable growth: facilitating sustainable development through market based instruments North West University Volume 9 No. 3 (2006).

Paterson A. Wandering about South Africa’s new protected areas regime SA Public Law vol 22 issue 1 (2007).


Porras I. and Blackmore E. Innovations for equity and inclusion in smallholder payments for ecosystem services, a workshop report (2014).


Turpie JK, Marais C, Blignaut JN, The working for water programme: an evolution of a payments for ecosystem services mechanism that addresses both poverty and ecosystem services in South Africa.(no date)

Sanbi factsheet 16 Biodiversity Stewardship partnering for securing biodiversity (2014)

Salzman J. Designing Payment for Ecosystem Services PERC policy series no. 48 (2010).


Journal Articles


Paterson A. ‘Considering Recent Developments in Environmental Fiscal Reform in South Africa,’ 2009 SAJELP (2009)
