THE SOUTH AFRICAN COASTAL ZONE: A CRITICAL ASSESSMENT OF WHETHER THE MANNER IN WHICH THE COASTAL ZONE IS DEFINED IN THE NATIONAL ENVIONMENTAL MANAGEMENT: INTEGRATED COASTAL MANAGEMENT ACT 24 OF 2008 FACILITATES AN INTEGRATED, AND ESPECIALLY ECOSYSTEM BASED, APPROACH TO MANAGING THE SOUTH AFRICAN COAST.

By

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DECLARATION OF ORIGINALITY

I, Shamine Ameersingh, do hereby declare that unless specifically indicated to the contrary in this text, this dissertation is my own original work and has not been submitted to any other university in full or partial fulfilment of the academic requirements of any other degree or other qualification.'

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ACRONYMS

CBD:	Convention on Biological Diversity
CPP:	Coastal Public Property
CPZ:	Coastal Protection Zone
EIA:	Environmental impact assessment
EsA:	Ecosystems-based approach
HWM:	High-water mark
ICZM:	Integrated coastal zone management
NEMA:	National Environmental Management Act 107 of 1998
NEM: ICMA:	National Environmental Management: Integrated Coastal Management Act 24 of 2008

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CHAPTER ONE: INTRODUCTION

1. Background

The National Environmental Management: Integrated Coastal Management Act[1] (the 'NEM: ICMA') came into operation on 1 December 2009. According to its long title, the purpose of the NEM: ICMA is, *inter alia*, '[t]o establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and polices, in order to promote the conservation of the coastal environment, . . ., and to ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable'.[2]

Although the NEM: ICMA does not contain a definition of integrated coastal zone management ('ICZM') itself, this concept has been defined in a number of legally binding documents. Perhaps the most significant of these at an international level is the Protocol on Integrated Coastal Zone Management in the Mediterranean Sea. 'Integrated coastal zone management' is defined in this Protocol as a 'dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts'.[3]

Exactly the same definition has been proposed by the Comoros, France and Madagascar in the First Negotiated Draft Text of the Protocol on Integrated Coastal Zone Management in the Western Indian Ocean. Apart from this definition, however, Mozambique, Somalia,

[1] 24 of 2008. The Act has been amended by the National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014.

[2] Apart from establishing a system of integrated coastal and estuarine management, the long title also provides that the purpose of the NEM: ICMA is 'to define rights and duties in relation to coastal areas; to determine the responsibilities of organs of state in relation to coastal areas; to prohibit incineration at sea; to control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment; to give effect to South Africa's international obligations in relation to coastal matters; and to provide for matters connected therewith'.

[3] See Article 2(f) of the Protocol on Integrated Coastal Zone Management in the Mediterranean Sea (the 'Barcelona Protocol'). The Protocol was adopted by the parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (the 'Barcelona Convention') on the 21 January 2008. It was ratified and came into force on 24 March 2011. It is the seventh protocol adopted under the Barcelona Convention and is the first legally binding regional treaty on integrated coastal zone management. Copies of both the Convention and the Protocol may be found at: http://www.unep.org/regionalseas/programmes/unpro/mediterranean/default.asp, accessed on 11 January 2016.

Tanzania and Kenya have proposed that ICZM should be defined as 'a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources'.[4]

Somewhat similarly, Mauritius and the Seychelles have proposed that ICZM should be defined as 'a dynamic process of governance that unites science, management and participatory stakeholders' involvement in ensuring sustainable development while mitigating adverse impacts on the coastal and marine ecosystems through the integration of environment and socio-economic activities'.[5]

The most simple definition, however, appears to be the one adopted by the British Department of the Environment (DoE). According to the DoE, ICZM is 'a process that brings together those involved in the development, management and use of the coast within a framework that facilitates the integration of their interests and responsibilities. The object is to establish sustainable levels of economic and social activity in our coastal areas while protecting the coastal environment. ICZM is essential to the ecosystem based approach'.[6]

Although it is very closely related to integrated coastal zone management, the ecosystem-based approach ('EsA') referred to in this definition emerged in a different context, namely the management of biodiversity and natural resources. The important conceptual role that it plays in the biodiversity context is illustrated by the fact that it was adopted by the

[4] Article 1 of the Seventh Draft Text of the Protocol on Integrated Coastal Zone Management in the Western Indian Ocean (the 'Nairobi Protocol'). Unlike the Barcelona Protocol, the Nairobi Protocol has not yet been adopted by the parties to the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (the 'Nairobi Convention'). At the sixth Conference of the Parties in 2010, however, the Secretariat was requested to prepare such a document for discussion. The seventh draft of this Protocol was presented for consideration at the Seventh Conference of the Parties in 2012. Unfortunately, not much progress appears to have been made since then. A copy of the Convention may be found at: http://www.unep.org/regionalseas/programmes/unpro/easternafrica/instruments/default.asp, accessed on 11 January 2016 and a copy of the Protocol at: http://www.unep.org/NairobiConvention/docs/8.%20UNEP-DEPI-EAF-CP.7-BUR.1-8_Brief_on_ICZM_protocol_for_the_Bureau_Meeting.pdf, accessed on 11 January 2016.

[5] Ibid. For a more detailed discussion of these protocols see J Rochette, R Bille and J Glazewski 'Recent development in implementing integrated coastal zone management (ICZM) with Regional Seas Framework: The development of ICZM Protocols' (2011) 18 *SAJELP* 95.

[6] Department of the Environment *Coastal Zone Management towards Best Practice* (1996) at 3.

Convention for Biological Diversity (the 'CBD')[7] as the 'primary framework' for action. According to the CBD, the ecosystems approach:

'. . . places human needs at the centre of biodiversity management. It aims to manage the ecosystem, based on the multiple functions that ecosystems perform and the multiple uses that are made of these functions. The ecosystem approach does not aim for short-term economic gains, but aims to optimise the use of an ecosystem without damaging it.'[8]

Despite the fact that each of these conceptual frameworks has its own definitions and sets of core principles (these are discussed in more detail in chapter three), there are strong similarities between them. This is because they are both ultimately based on the same underlying desire, namely to 'develop and apply a holistic and broad-scale approach to research, policy and management that takes account of both people and their relationship to the environment'.[9]

As Sas, Fischhendler and Portman point out, when it comes to implementing a system of integrated coastal zone management and especially an ecosystems based approach, the first step is usually to delineate the legal and managerial boundaries of the coastal zone and to do so in a manner that encompasses the coastal ecosystem or, at least, as much of the coastal zone as possible.[10] Accordingly, it is not surprising that section 2(a) of the NEM: ICMA provides that its first object is to 'determine the coastal zone of the Republic'.[11]

[7] Convention on Biological Diversity 31 ILM 818 (1993). Available at: http://www.cbd.int/convention/text, accessed on 11 January 2016.
[8] [8] R Haines-Young and M Potschin 'Integrated Coastal Zone Management and the Ecosystem Approach' *Centre for Environmental Management (CEM) Working Paper No 7* (2011) at 2.
[9] Ibid.
[10] E Sas, I Fischhendler and MR Portman, 'The demarcation of arbitrary boundaries for coastal zone management: The Israeli case' (2010) 19 *Journal of Environmental Management* 2358 at 2359.
[11] Apart from determining the coastal zone of the Republic, section 2 provides that the other objects of the NEM: ICMA are: to provide, within the framework of the National Environmental Management Act, for the co-ordinated and integrated management of the coastal zone by all spheres of government in accordance with the principles of co-operative governance (s 2(b)); to preserve, protect, extend and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations (s 2(c)); to secure equitable access to the opportunities and benefits of coastal public property (s 2(d)); to provide for the establishment, use and management of the coastal protection zone (s 2(dA)); and to give effect to the Republic's obligations in terms of international law regarding coastal management and the marine environment (s 2(e)).

An examination of the manner in which the coastal zone has been defined in various coastal jurisdictions shows that a distinction is often drawn between the landward side of the coastal zone and the seaward side.[12]

Boundaries on the landward side of the coastal zone are usually based on ecological and physical considerations, legal and management considerations or a combination of these. Ecological and physical considerations include factors such as the physical landscape, ecological processes and land uses and infrastructure, while legal and management considerations include factors such as local, regional and provincial boundaries.[13]

Apart from the considerations set out above, boundaries on the landward side of the coastal zone are sometimes also based on entirely arbitrary considerations. These sorts of boundaries do not take into account either ecological and physical considerations or legal and management considerations. Instead, they are usually based on a random unit of distance from a natural feature, for example 1 kilometre from the high-water mark.[14]

Boundaries on the seaward side of the coastal zone are usually based on jurisdictional lines established in terms of the United Nations Convention on the Law of the Sea (the 'UNCLOS'). These jurisdictional lines include the 'base line', the 'territorial limits', the 'exclusive economic zone' and the 'continental shelf'.[15]

The distinction drawn between the landward and seaward sides of the coastal zone in other coastal countries has also been adopted in South Africa. The coastal zone is defined in section 1 of the NEM: ICMA as 'the area comprising coastal public property, the coastal protection zone, coastal access land, coastal protected areas, the seashore and coastal waters, and includes any aspect of the environment on, in, under and above such area'.

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[12] See W Freedman 'Integrated Coastal Management Boundaries and South Africa's New Integrated Coastal Management Act' in E Couzens and T Honkonen (eds), *International Environmental Law-making and Diplomacy Review – 2008* (2009) at 167. See also JR Clark *Coastal Zone Management Handbook* (1996) and Y Tanaka 'Zonal and integrated management approaches to ocean governance: reflections on a dual approach in the international law of the sea' (2004) 19(4) *International Journal of Marine and Coastal Law* 483.
[13] Ibid, at 168.
[14] Ibid at 168.
[15] United Nations Convention on the Law of the Sea 21 ILM 1261 (1982). Available at: http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm, accessed on 11 January 2016.

As this definition indicates, the coastal zone consists of a series of adjacent and overlapping zones.[16] The landward boundaries of these zones are based on a variety of factors, including geomorphologic units, ecological processes, administrative lines and arbitrary lines. The seaward boundaries of these zones are based on the jurisdictional lines established by the UNCLOS, including the territorial limits, the exclusive economic zone and the continental shelf.

Given this approach, an important question that arises is whether the coastal zone has been determined in a manner that will facilitate the implementation of an integrated approach and especially the implementation of an ecosystems based approach to the management of the South African coast.

2. Research question

The purpose of this dissertation is to critically analyse the manner in which the coastal zone is defined in NEM: ICMA in order to determine the extent to which it facilitates an integrated, and especially ecosystem based, approach to managing the South African coast.

In particular, the purpose of this dissertation is to:

(a) set out and discuss what is meant by integrated coastal zone management;
(b) set out and discuss what is meant by ecosystems based management;
(c) set out and discuss what is meant by coastal public property;
(d) set out and discuss what is meant by the coastal protection zone;
(e) set out and discuss what is meant by coastal access land;
(f) set out and discuss what is meant by coastal protected areas;
(g) set out and discuss what is meant by coastal waters and the seashore; and
(h) critically analyse the extent to which these concepts facilitate an integrated and ecosystems based approach to managing the coast.

3. Methodology

[16] See J Gibson 'The development in integrated coastal management legislation in South Africa' (2007) 18 *Journal of Water Law* 1.

This is a desk top study. It is based largely on primary and secondary materials. These materials include statutes, judgements and common law principles. In addition, they include textbooks, journal articles, reports and internet websites.

4. Structure of the Study

The study is divided into six chapters:

Chapter One: Introduction

The background to this study as well as the research question, the methodology and the structure of the study are set out and discussed in chapter one.

Chapter Two: The South African coast

The benefits of and threats facing the South African coast are set out in chapter two together with a brief description of the coast itself.

Chapter Three: Integrated coastal zone management

The principles underlying integrated coastal zone management as well as its relationship to ecosystems based management are set out and discussed in chapter three.

Chapter Four: The legal and policy framework

The legal and policy framework governing the management and administration of the coast in South Africa is set out and discussed in chapter four.

Chapter Five: The coastal boundaries

The various adjacent and overlapping zones which constitute the coastal zone as defined in the NEM: ICMA are set out and discussed in chapter five.

Chapter Six Analysis and conclusion

The extent to which the definition of the coastal zone in the NEM: ICMA promotes an integrated, and especially ecosystem based, approach to managing the coast is assessed in this chapter.

CHAPTER TWO: THE SOUTH AFRICAN COAST

'Africa's long and beautiful coasts and abundance of marine resources can contribute to providing economic, food and environmental security for the continent. These coastal and marine resources, like the rest of Africa's environmental resources, cannot continue to be exploited in a manner that does not benefit Africa and her people. This is a paradox of a people dying from hunger, starvation and poverty when they are potentially so rich and well endowed'.[17]

1. Introduction

As its name indicates, South Africa is situated at the southern tip of Africa and has a long, diverse and naturally abundant coast. Its coastline extends over 3100 kms from the Orange River Mouth on the border with Namibia in the west to Ponto Do Oro on the border with Mozambique in the east. [18] In addition, it also includes the Prince Edward Islands (Marion Island and Prince Edward Island) both of which are located in the Southern Ocean. Together these islands add a further 1400 kms to South Africa's coastline.[19]

The continental South African coast is surrounded by three oceans, namely the cool Atlantic Ocean, the cold Southern Ocean and the warm Indian Ocean. It also encompasses two large marine ecosystems, namely the Benguela Current Ecosystem on the west coast and the Aguhlas Current Ecosystem on the east coast. A large marine ecosystem is a large area of the ocean (usually 200 000 square kilometres or more) which is adjacent to a continent and where primary productivity is greater than in other open parts of the ocean.[20]

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[17] Former President Nelson Mandela, Excerpt from a message to an international conference on 'co-operation for the development and protection of the coastal and marine environment in Sub Saharan Africa', Cape Town, December 1998, quoted in the *White Paper for Sustainable Coastal Development in South Africa*. Available at: https://www.westerncape.gov.za/text/2004/12/sectiona.doc, accessed on 11 January 2016.

[18] Department of Environmental Affairs (DEA) *South Africa's National Coastal Management Programme* (2014) at 12. Available at: https://www.environment.gov.za/.../nationalcoastal-managementprogramme, accessed on 5 January 2016.

[19] The Prince Edward Islands lie 2 000 kms south of Port Elizabeth. Marion Island is 290 square kilometers and Prince Edward Island is 45 square kilometers. They are separated by 19 kms of ocean. Both islands have been declared special nature reserves. They are used for breeding and molting purposes by seabirds and seals respectively.

[20] DEA *South Africa's National Coastal Management Programme* (note 18) at 13.

The Benguela Current Ecosystem is characterised by the upwelling of waters that are fortified with nutrients both within the deep extent of the ocean and the outward levels of the waters. The upwelling of this nutrient-rich water stimulates the growth of large diatom-dominated phytoplankton, which in turn stimulates the growth of large populations of a relatively limited number of marine species. Among the marine species that occur in large numbers are several which are commercially important, for example abalone, anchovy, hake, sardines and rock lobsters.[21]

Unlike the Benguela Current Ecosystem, the Agulhas Current Ecosystem is characterised by warm nutrient-poor waters which do not well-up, but rather flow in a south-westerly direction from the tropical areas of the Indian Ocean near to Madagascar. Despite the fact that its waters are nutrient-poor, the Agulhas Current supports a wide diversity of marine life although the size of each population is low. This is typical of warm, nutrient-poor waters, while the opposite is true of nutrient-rich waters.[22]

Biographical regions and currents along the South African coast (DEA *South Africa's National Coastal Management Programme* (2014) at 12)

[21] B Scholes, M Scholes and M Lucas *Climate Change: Briefings from Southern Africa* (2015) at 89.
[22] Ibid at 90.

Due to the contrasting temperatures of the two large marine ecosystems, the South African coast may be divided into three clearly different biographical areas, namely the cool temperate west coast, the south coast which is warm and the tropical east coast.[23]

The West coast stretches from the Orange River Mouth to Cape Town. Thanks to the Benguela Current, its nutrient-rich coastal waters are cold and support large populations of certain marine species. The coastline is characterised by sandy beaches in the south and rocky shores in the north. It has a cold temperate climate and low winter rainfall. As a result of the region's low rainfall there are very few perennial rivers.[24]

The South coast stretches from Cape Town to Port Elizabeth. This area interfaces between the cool temperate west coast and the tropical east coast. Consequently, its coastal waters are usually warm, but the upwelling of cold water occurs at times. The coastline consists of sandy beaches, rocky shores and deep river gorges, for example Storms River. There are also several large, and many small bays in this region. It has a warm temperate climate with average summer rainfall in the south-east and winter rainfall in the south-west.[25]

The East coast stretches from Port Elizabeth to Ponto Do Oro and consists of warm waters which contain a number of different species. Due to the warm temperatures of the water, the nutrient levels remain low and consequently it produces less biologically. The area comprises long sandy beaches with rocky vegetation in between. The southern section of the East coast also includes cliffs, bays and rugged shores. The East coast houses the majority of the country's estuaries and large lakes including Kosi Bay, Lake Sibaya and Lake St Lucia. The climate is subtropical, with substantial rain in the summers.[26]

2. The value of the coast

In its first *National Coastal Management Programme*, the Department of Environmental Affairs (the 'DEA') describes the coast as 'a rich and diverse national asset, providing important economic and social opportunities for the human population'.[27] It is not surprising;

[23] DEA *South Africa's National Coastal Management Programme* (note 18) at 12.
[24] DW Freedman 'The Coast' in J Glazewski *Environmental Law in South Africa* 3ed (2013) at 11-3.
[25] Ibid.
[26] Ibid.
[27] DEA *South Africa's National Coastal Management Programme* (note 18) at 4.

therefore, the DEA goes on to claim that 'coastal populations have developed a strong reliance on these resources for commercial opportunity and gain, food, recreation and transport' and that 'coastal resources have facilitated job creation and general economic upliftment in coastal regions'.[28]

In support of its description of the coastal zone as a rich and diverse national asset, the DEA points out that approximately 35% of South Africa's annual gross domestic product ('GDP') is derived directly from the use and enjoyment of coastal resources. These direct benefits include the fishing industry, port and harbour development and recreation and tourism opportunities. In addition, the DEA points out further; approximately 28% of South Africa's GDP is derived indirectly from the use and enjoyment of coastal resources. These indirect economic benefits include erosion control, waste assimilation, detoxification and recycling.[29]

Apart from direct and indirect economic benefits, the coastal zone also provides many cultural, religious and social benefits that are difficult to quantify in monetary terms. It also provides many scientific, educational and environmental benefits. Perhaps the most important of these are the environmental benefits the coastal zone provides. Coastal zones, for example, are usually biologically diverse and rich in natural resources. They thus provide nursery and feeding areas for many aquatic species, especially in the early stages of their life-cycles. In addition, they also support large numbers of birds, reptiles and other terrestrial species. Apart from providing nursery and feeding areas, the coastal zone also contains physical features such as reefs and mangrove forests which help to mitigate the consequences of dynamic coastal processes such as sea level rise, changes in the shoreline and flooding. The physical characteristics also help regulate other natural activities in the area like soil accretion and controlling erosion caused by factors like wind and tides.[30]

3. The challenges facing the coast

Despite its enormous value, or perhaps because of it, the environmental integrity of the coastal zone is under threat. In its first *State of South Africa's Biodiversity Report,* the South African National Biodiversity Institute (the 'SANBI') points out that the two greatest threats

[28] Ibid.
[29] Ibid.
[30] N Scialabba (ed) *Integrated coastal area management and agriculture, forestry and fisheries: FAO Guidelines* Food and Agriculture Organization of the United Nations (1998) at 3.

to South Africa's marine and coastal ecosystems are fishing and coastal development respectively.[31]

Fishing is a threat to the environmental integrity of marine ecosystems, the SANBI points out further, because it threatens the continued existence not only of targeted species, but also of non-targeted species, such as birds, turtles and sharks, while coastal development is a threat to the environmental integrity of coastal ecosystems because it changes their physical features by building on or paving over them. It thus undermines their ability to provide ecosystem services.[32]

Apart from over-fishing and coastal development, SANBI goes on to point out that South Africa's marine and coastal ecosystems also face significant threats from the following:

- alien invasive species such as the Mediterranean mussel;
- marine mining for coastal diamonds, oil and gas;
- dune mining for heavy metals and phosphates;
- shipping, which can introduce invasive alien species and cause pollution;
- agricultural, industrial and municipal pollution from rivers washing out to sea; and
- the over abstraction of fresh water from rivers, which reduces the amount that flows out to sea.[33]

The coast is a strong commercial resource which includes tourism, commercial fisheries, aquaculture, minerals and mining, manufacturing and industry and agriculture. Unfortunately these uses are often in conflict with the protection of the coast as a resource. In *Wildlife Society of Southern Africa and Others v Minister of Environmental Affairs and Tourism of the Republic of South Africa*,[34] Pickering J stated that ' certain land use practices have developed along almost the entire Transkei coastline, and as such they constitute a very real threat to the environmental sensitivity of the area in question'.[35] In this case an environmental organisation was concerned about the permission being granted by the local chiefs to

[31] South African National Biodiversity Institute *LIFE: The State of South Africa's Biodiversity 2012* (2013) at 34. Available at: http://bgis.sanbi.org/NBA/LIFEStateBiodiversity2012_lowres.pdf, accessed on 11 January 2016.
[32] Ibid. Certain types of fishing such as trawling also damage natural habitats.
[33] Ibid.
[34] 1996 (3) SA 1095 (Tk).
[35] Ibid at 1097.

individuals to occupy the Transkei coastline and was successfully granted an order to stop such practice.

4. Apartheid and the coast

Despite the fact that South Africa is a coastal country, due to its apartheid legacy, the value and the benefits of the coast were not equitably distributed amongst its citizens and this remains a daunting challenge. This is evident when one compares, for example, KwaZulu-Natal and the Eastern Cape, especially that part which was encompassed by the Transkei. Although both coastlines possess natural attributes that make them attractive tourist destinations, KwaZulu-Natal boasts a booming tourist industry and makes a valuable contribution to the country's economy, while the Transkei does not largely due to poor management of the coast.[36]

During the apartheid era, due to corruption within the government authorities, a system of uncontrolled permits were issued for commercial use along the Transkei coast, leading to mass exploitation of the area.[37] This led the government to withdraw the system of permits, which did not alleviate the problem. The poor continued to draw resources like shellfish illegally in order to earn a basic living. The government in turn responded by preventing people from living within one kilometre from the coast.[38] This meant that the community lost land which was used for grazing and access to fresh spring water.

The rural portions of both the Transkei and KwaZulu-Natal remain impoverished with very little economic activity occurring within these areas, despite the fact that ninety percent of the coast is not urban. On the other hand, despite the fact that Cape Town, Durban and Port Elizabeth have booming coastal economies, a large portion of their population lives in abject poverty. In the Northern Cape, another example of the disparity created by apartheid, the Namaqualand coastal area has not been developed and its people are largely unemployed.

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[36] Department of Environmental Affairs *Coastal Policy Green Paper: Towards Sustainable Coastal Development in South Africa* (1998) at Part 2, Chapter 6.
[37] Coastal and Environmental Services, EnviroFish Africa and MMB Consulting Services *The Eastern Cape Coastal Management Programme: State of Play Reports* (2004) at 8. Available at: http://www.dedea.gov.za/EC%20Coastal%20Management%20Programme/FINAL%20SOP%20VOLUME%20-%20EC%20CMP%202002.pdf, accessed on 11 January 2016.
[38] Transkei Environmental Conservation Decree 9 of 1992: section 39(1).

This area was historically dominated by mining and the coast was only addressed from the perspective of mining legislation. [39]

Despite the fact that South Africa has a very long and beautiful coast line, the coastline presents with many challenges that are exclusive to South Africa largely due to the fact that the apartheid legacy excluded many people from enjoying and maximising both the aesthetic and commercial benefits of the coast. This meant that those who had access to the coast monopolised the aesthetic value, owned property on the coast and controlled the commercial revenue received through coastal economic activities. As a result a large part of the population who relied on the coast for their livelihood could only engage in limited activities like artisanal fishing for their livelihood, which was often uncontrolled and unregulated, like in the case of the commercial permits issued in the Transkei. Realising the economic potential from the coast, post-apartheid, there has been a steady migration to the coast to become a part of the vast opportunities which became available. At the same time those who have been fortunate to own properties on the coast are very protective over their proprietary rights, and future legislation must be cognisant of the historic protection of property rights.[40]

5. Conclusion

It is clear that South Africa is endowed with a vast beautiful coastline which has immense economic potential, but at the same time has an intricate and rich ecosystem which needs protection against the multiple human uses that occur within the ecosystem, and until a successful integrated management system is in place to balance the socio-economic uses against the protection of the ecosystem, the value drawn from our coasts will soon be depleted and the coast destroyed. The NEM: ICMA strives to meet this objective through an integrated and eco-system based approach to managing the coast.

[39] DEA *Coastal Policy Green Paper: Towards Sustainable Coastal Development in South Africa* (note 36) at Part 2, Chapter 6.
[40] See (DEA) *South Africa's National Coastal Management Programme* (note 18) at 12.

CHAPTER THREE: INTEGRATED COASTAL ZONE MANAGEMENT

1. Introduction

As was pointed out in Chapter One, although the integrated coastal zone management ('ICZM') and ecosystems based ('EsA') approaches emerged in different contexts and, therefore, have different definitions and sets of core principles, there are strong similarities between them. This is because they are both ultimately based on the same underlying desire, namely to 'develop and apply a holistic and broad-scale approach to research, policy and management that takes account of both people and their relationship to the environment'.[41]

The aims and objects of these approaches, as well as their similarities, can best be illustrated by comparing the core principles on which they are based. This is because while the definition of each of these approaches is still subject to debate and discussion, there appears to be general consensus on the core principles that underlie them. In addition, these core principles have been given legal effect or are about to be given legal effect in the Barcelona and Nairobi Protocols on ICZM and the Convention on Biodiversity (the 'CBD').

The definitions and core principles in these various documents will be compared and contrasted in this chapter.

2. Core principles of ICZM in the Barcelona and Nairobi Protocols

Both the Protocol on Integrated Coastal Zone Management in the Mediterranean (the 'Barcelona Protocol') and the seventh Draft Protocol in Integrated Coastal Zone Management in the West Indian Ocean (the 'draft Nairobi Protocol') contain a set of core ICZM principles. These core principles are set out in Article 6 of the Barcelona Protocol and Article 7 of the draft Nairobi Protocol.

Article 6 of the Barcelona Protocol provides in this respect as follows:

[41] R Haines-Young and M Potschin 'Integrated Coastal Zone Management and the Ecosystem Approach' *Centre for Environmental Management (CEM) Working Paper No 7* (2011) at 2.

'In implementing this Protocol, the Parties shall be guided by the following principles of integrated coastal zone management:

(a) the biological wealth and the natural dynamics and functioning of the intertidal area and the complementary and interdependent nature of the marine part and the land part forming a single entity shall be taken particularly into account;

(b) all elements relating to hydrological, geomorphologic, climatic, ecological, socioeconomic and cultural systems shall be taken into account in an integrated manner, so as not to exceed the carrying capacity of the coastal zone and to prevent the negative effects of natural disasters and of development;

(c) The ecosystems approach to coastal planning and management shall be applied so as to ensure the sustainable development of coastal zone;

(d) appropriate governance allowing adequate and timely participation in a transparent decision-making process by local populations and stakeholders in civil society concerned with coastal zones shall be ensured;

(e) cross-sectorally organized institutional coordination of the various administrative services and regional and local authorities competent in coastal zones shall be required;

(f) the formulation of land use strategies, places and programmes covering urban development and socio-economic activities, as well as other relevant sectoral policies, shall be required;

(g) the multiplicity and diversity of activities in coastal zones shall be taken into account, and priority shall be give, where necessary, to public services and activities requiring, in terms of use and location, the immediate proximity of the sea;

(h) the allocation of uses throughout the entire coastal zone should be balanced and unnecessary concentration and urban sprawl should be avoided;

(i) preliminary assessments shall be made of the risks associated with the various human activities and infrastructure so as to prevent and reduce their negative impact on coastal zones;

(j) damage to the coastal environment shall be prevented and, where it occurs, appropriate restoration shall be effected.'[42]

Article 7(2) of the draft Nairobi Protocol provides in this respect as follows:

'In addition to the general principles of sustainable development, the Contracting Parties shall be guided by the following ICZM principles:

(a) integration and coordination of management efforts across all sectors and operational levels;

(b) use of combination of instruments;

(c) adoption of a broad holistic perspective;

(d) consideration for local specificities and peculiarities;

(e) securing equitable access to the coastal zone and the opportunities and benefits of coastal resources and services;

[42] See the Protocol on Integrated Coastal Zone Management in the Mediterranean, (Barcelona Protocol) official journal of the European Union, L034, 04February 2009.P0019-0028, Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:22009A0204%2801%29, accessed on 10 January 2016.

(f) the use of adaptive management;

(g) the use of participatory approaches;

(h) environmental stewardship of coastal zone resources;

(i) application of ecosystem based management to the coastal zone;

(j) good governance allowing adequate and timely participation in transparent decision making processes involving all relevant government and other public line agencies, private sector and civil society stakeholders; and

(k) cross-sectoral institutional coordination of the administrative services, and national, regional and local authorities in the coastal zone'.[43]

A careful examination of these Protocols shows that there are a number of core principles that are common to both. These common core principles can be divided into three categories. These are as follows:

First, those that focus on management processes. Among these are those principles that emphasise the need to promote a cross-sectoral, integrated and holistic approach. In addition, they also include those principles that emphasise the need to promote an ecosystems approach. Some examples are principle (a) in the Barcelona Protocol and principle (c) in the Nairobi Protocol which refer to integration and principle (c) in the Barcelona Protocol and principle (i) in the Nairobi Protocol which refer to an ecosystem-based approach.

Second, those that focus on governance issues. Among these are those principles that emphasise the need to promote good governance, local specificity and public participation. In addition, they also include those principles that emphasise the need to develop a common understanding among all participants. An example is principle (d) in Barcelona Protocol and principle (g) in the Nairobi Protocol which refer to good governance, and participation.

Third, those that focus on adaptive management. Among these are those principles that refer to adaptive management, environmental impact assessment, risk management and the use of a combination of instruments. An example is principle (i) in the Barcelona Protocol and principle (f) in the Nairobi Protocol which refer to adaptive management, environmental impact assessments and risk management.

[43] See the Seventh Draft text of the Protocol on Integrated Coastal Zone Management in the Western Indian Ocean, UNEP (DEPI)EAF/CP7/BUR.1/8. Available at: http://www.unep.org/NairobiConvention/docs/8.%20UNEP-DEPI-EAF-CP.7-BUR.1-8_Brief_on_ICZM_protocol_for_the_Bureau_Meeting.pdf, accessed on 13 January 2016.

3. Core principles of EsA in the Convention for Biological Diversity (CBD)

The current interest in the EsA can be traced back to the Convention on Biological Diversity which adopted it as the 'primary framework' for action. In terms of the CBD, the EsA forms the foundation for addressing all the benefits that the ecosystem contributes to society. The EsA is defined in the CBD as:

'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way'. Its goal is to manage the coastal zone based on the functions of the ecosystem and the uses that are made of these functions'.[44]

Like the ICZM approach, the EsA is also based on a set of core principles. These principles were adopted by the Conference of the Parties to the CBD at its Fifth Meeting in Nairobi in 2000 and provide as follows:

'1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual and potential) of their activities on adjacent and other ecosystems.
4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
   (a) Reduce those market distortions that adversely affect biological diversity;
   (b) Align incentives to promote biodiversity conservation and sustainable use; and
   (c) Internalise costs and benefits in the given ecosystem to the extent feasible.
5. Conservation of ecosystem structure and functioning in order to maintain ecosystem services should be a priority target of the Ecosystem Approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scale.
8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

[44] See Article 2 of the Convention on Biological Diversity 31 ILM 818 (1993). Available at: http://www.cbd.int/convention/text, accessed on 13 January 2016.

12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines'.[45]

Like the core ICZM principles, these core EsA principles can be divided into three categories, including one that focuses on management processes and another that focuses on governance issues.

Insofar as management processes are concerned, the EsA principles also emphasise the need to promote a cross-sectoral (see EsA principle 3), integrated (see EsA principle 10), holistic (see EsA principle 4) and ecosystems (see EsA principle 5) approach to managing the coastal zone.

Insofar as governance issues are concerned, the EsA principles also emphasise the need to promote good governance (see EsA principle 1), local specificity (see EsA principle 7), public participation (see EsA principle 11) and a common understanding (see EsA principle 12) among all participants.

Although it is not specifically mentioned in any of the principles set out above, one the most salient aspects of the EsA approach is that it is essentially a place based approach. This is because it is aimed at protecting and restoring the health, function and resilience of an entire ecosystem and the benefits that ecosystem provides.[46]

An important consequence of this place based approach is that a management framework designed to promote an EsA approach must encompass the impact of human use on ecosystem functions and, accordingly, must be based on biophysical and ecological considerations rather than legal and managerial considerations.[47]

The fact that the EsA approach is fundamentally a place based approach highlights one of the few significant differences between the ICZM and EsA approaches, namely that while the ICZM approach tends to focus on the manner in which a particular biophysical or ecological space should be managed and the types of governance institutions and processes that are

[45] See Decision V/6, Annex 1. CBD COP-5 Decision 6 UNEP/CBD/COP/5/23. Available at: https://www.cbd.int/decision/cop/default.shtml?id=7148, accessed 13 January 2016.
[46] United Nations Environmental Programme (UNEP) *Taking steps towards Marine and Coastal ecosystem-based management – An introductory guide* (2011) at 10.
[47] Ibid at 11.

required, the EsA approach tends to focus on the nature and extent of the biophysical or ecological space that must be managed.[48]

Even though this difference is relatively minor, it does provides us with a useful criterion for determining whether manner in which the coastal zone has been defined in the NEM: ICMA facilitates an integrated, and especially ecosystem based, approach to managing the South African coast. This criterion is whether the various boundaries that delineate the landward and seaward boundaries of the coastal zone are based primarily on ecological and physical considerations or legal and managerial considerations.

If these boundaries are based primarily on ecological and physical considerations rather than legal and managerial ones, then they are more likely to facilitate an ecosystems-based approach and vice versa.

4. Conclusion

In this chapter we have seen that while the ICZM and EsA approaches emerged in different context and have slightly different foci, their core principles overlap in many respects. One of the few significant differences, however, is that while the ICZM approach tends to focus on the manner in which a particular space must be managed, the EsA approach focuses on the nature and extent of the biophysical or ecological space that must be managed. In addition, we have also seen that this difference provides us with a useful criterion to determine whether the various boundaries of the coastal zone facilitate an integrated and, especially, ecosystems-based approach, to managing the coast.

[48] Haines-Young and Potschin *Centre for Environmental Management (CEM) Working Paper No 7* (note 41) at 8.

CHAPTER FOUR: THE LEGAL AND POLICY FRAMEWORK

1. Introduction

Before turning to determine whether the manner in which the coastal zone is defined in the NEM: ICMA facilitates an integrated, and especially ecosystem-based approach, to managing the coastal zone, it will be helpful to set out and discuss the legal and policy framework governing coastal management in South Africa as well as the manner in which the coast has actually been defined in the NEM: ICMA.[49]

2. The common law

The legal framework governing the coast may be traced all the way back to Roman law. As Freedman points out, in Roman law the sea and the sea-shore were defined as common things (*res omnium communes*). Common things were those things that were not capable of being owned either privately or publicly. This is because they were not capable of being controlled by human beings and, therefore, did not actually satisfy the definition of a thing. Although these things could not be owned by anyone, everyone was entitled to use and enjoy them. This is because they were common. The manner in which people could exercise their rights to use and enjoy these things, however, was subject to regulation by the state.[50]

Unlike in Roman law, in Roman-Dutch law the sea and sea-shore were not classified as common things. Instead, they were classified as public things (*res publicae*). In Roman law public things were defined as those things which were owned by the citizens of a particular state and which the citizens as owners were entitled to use. In Roman-Dutch law, however, public things were defined as those things that belonged to the sovereign, but which members of the general public were still entitled to use. In other words, they were those things that were owned by the state, but which were intended to be used by the general public. Given that public things belong to the state, the state was entitled to regulate the manner in which people used public things.[51]

[49] The legal and policy framework is discussed in this chapter and the relevant provisions of the NEM: ICMA in the next chapter.
[50] See Freedman *Environmental Law in South Africa* (note 24) at 11-20.
[51] Ibid.

In both Roman and Roman-Dutch law, the seashore extended to the line reached by the *maximus fluctus*. The meaning of this phrase was discussed by the Appellate Division in *Pharo v Stephen*.[52] In this case the Court had to decide whether the landward boundary of the sea-shore was the line reached by the average high tide, as Stephen argued, or the line reached by the water during the stormiest part of the year, as Pharo argued.[53] The Court held that it was the latter.

In arriving at this decision, the Appellate Division began its judgment by stating that while the landward boundary of the sea-shore is defined in the *Institutes* as the *hibernus fluctus*, it is defined in the *Digest* as the *maximus fluctus*. Despite the fact that the landward boundary is defined differently in these two sources of Roman law, it was important to note that the concept of the *maximus fluctus* covers the concept of the *hibernus fluctus*.[54]

The key question that had to be answered, therefore, the Appellate Division stated further, was what the term *maximus fluctus,* and especially what the term *fluctus*, meant. In order to answer this question, the Court engaged in a careful examination of a variety of sources. After examining these sources, the Court held that the word *fluctus* referred to the flow of the sea over land due to storms and not to the flow of the sea over land due to tides.[55]

This meant, the Appellate Division went on to state that the words *maximus fluctus* must refer to the maximum flow of the sea over the land due to storms during the stormiest part of the year. The storms referred to in the words *maximus fluctus*, however, the Court concluded, did not include abnormal or exceptional storms. Instead, it referred to ordinary winter storms.[56]

To physically determine this line, the Appellate Division looked at the evidence of both the surveyors for Pharo and Stephan. Both surveyors used debris, bamboo, seaweed, driftwood and similar objects to determine the line. Using these methods, both surveyors were not far apart in determining the line at springtide. The defendant's surveyor took the line further with the use of witnesses to describe the 'line of high tide in unusual stormy weather'. The Court

[52] *Pharo v Stephen* 1917 AD 1.
[53] Ibid at 6.
[54] Ibid at 7.
[55] Ibid at 8.
[56] Ibid at 9.

rejected consideration of this line and pointed out that it goes beyond the springtide and far beyond the high water mark as a line which occurs only in occasional weather.

3. The Sea-shore Act

The common law principles regulating the sea and the sea-shore were codified in 1935 when the Sea Shore Act was passed.[57] Section 2(1) of this Act provided that ownership of the sea and the sea-shore vested in the State President.[58] The ownership that vested in the State President, however, was not the same as the private law concept of ownership. This is because the State President owned the sea and the sea-shore for the 'general use and enjoyment of the whole community'.[59] He or she was, accordingly, the 'mere custodian of the sea-shore on behalf of the public'.[60]

The 'sea' was defined in section 1 of the Sea-shore Act as 'the water and the bed of the sea below the low water mark and within the territorial waters of the Republic including the water and bed of any tidal river and of any tidal lagoon', and the 'sea-shore' as 'the water and land between the low-water mark and the high-water mark'.

The low-water mark was defined as the 'lowest line to which the water of the sea recedes during periods of ordinary spring tides'; and the high-water mark as 'the highest line reached by the water of the sea during ordinary storms occurring during the stormiest period of the year, excluding exceptional or abnormal floods'.

Besides vesting ownership of the sea and the sea-shore in the State President, the Sea-shore Act also provided that parts of the sea and sea-shore could be disposed of by sale, donation,

[57] 21 of 1935.
[58] Apart from vesting ownership of the sea and the sea-shore in the President, section 2(1) also provides that the ownership of those portions of the sea and the sea-shore which were lawfully alienated before the commencement of the Act or which may be alienated thereafter in terms of the Act or any other law, does not vest in the President.
[59] *South African Shore Angling Association v Minister of Environmental Affairs* 2002 (5) SA 511 (SECLD) at 519.
[60] *Consolidated Diamond Mines of South West Africa (Ltd) v Administrator, South West Africa* 1958 (4) SA 572 (A) at 62. See also *Telkom v Member of the Executive Council for Agriculture and Environmental Affairs, KwaZulu-Natal* 2003 (4) SA 23 (SCA) at 31.

or letting to a local authority and in limited circumstances permission could be requested to use parts of the sea shore for mining.[61]

The public's common law right to use and enjoy the sea and the sea-shore was expressly reserved in section 13(c) of the Act. This section provided that:

'[n]othing contained in this Act shall affect any rights of any member of the public to use the sea-shore or the sea, except insofar as such are inconsistent with the rights conferred by a title validated by this Act, or by any title, lease, permit, authority, delegation or regulation lawfully issued, entered into, granted or made by virtue of this Act or by virtue of any such title, lease, permit, authority, delegation or regulation'.

In *Consolidated Diamond Mines of SWA (Limited) v Administrator South West Africa*,[62] the Appellate Division held that the public's common law rights to use and enjoy the sea and the sea-shore included the right 'to go onto [the seashore], to bathe, fish, to dry nets, to draw up boats' . . . and that any substantial interference with these rights would be a wrongful act.[63]

4. The NEM: ICMA

4.1 Introduction

The decision to enact the NEM: ICMA can be tracked back to the early 1990s when the new democratic government recognised that the coast was a valuable asset that could play a vital role in the reconstruction and development of the country, but that in order to achieve this goal a new policy for administering and managing the coast would have to be developed, adopted and implemented.

Flowing out of this decision, the Minister of Environmental Affairs and Tourism, Mr Pallo Jordan, appointed a task team to draft a *Green Paper*[64] and then a *White Paper*. The *White Paper* which represents the government's official policy on the administration and

[61] Section 2(1) of the Seashore Act gives the State President ownership of the seashore and the sea. Section 3 allows for a comprehensive list of circumstances under which the State President will allow the letting of the seashore including in S3 (1) training of horses landing sites for aircraft, legalizing encroachments. The list is extensive with wide ranging powers attributed to the State President. Section3 (2) provides for limited mining.
[62] 1958 (4) SA 572 (A).
[63] Ibid at 62.
[64] The *Green Paper* is formally known as the *Coastal Policy Green Paper: Towards Sustainable Coastal Development in South Africa.* It was published by the Department of Environmental Affairs in 1998.

management of the coast is formally known as *White Paper for Sustainable Coastal Development in South Africa*.[65]

4.2 The White Paper

While the *White Paper* accepted that the coast had to contribute to the reconstruction and development of the country, it also argued that the coast would only be able to make such a contribution if its ecological diversity, health and productivity were maintained. In order to reconcile these conflicting economic, social and environmental concerns, the *White Paper* argued further, the concept of 'sustainable coastal development' should be adopted as a part of the long term vision for coastal management in South Africa.[66]

The long term vision set out in the *White Paper* reads as follows:

- 'We the people of South Africa celebrate the diversity, beauty and richness of our coast and seek an equitable balance of opportunities and benefits throughout it.
- We strive for sustainable coastal development – involving a balance between material prosperity, social development, cultural values, spiritual fulfilment and ecological integrity, in the interests of all South Africans.
- We strive for a time when all South Africans recognize that the coast is ours to enjoy in the spirit of community.
- We look forward to a time when all South Africans assume shared responsibility for maintaining the health, diversity and productivity of coastal ecosystems in a spirit of stewardship and caring.
- We seek to guide the management of our coast in a way that benefits current and future generations, and honours our obligations and undertakings from local to global levels'.[67]

The only way, in which sustainable coastal development can be achieved, the *White Paper* then argued was to move away from resource-centred, uncoordinated, sectoral and top-down approach that had been followed in the past and adopt an entirely new approach. This new approach the *White Paper* argued further should be based on the following characteristics:

- First, coastal management decision should not be resource-centred, but should rather be people-centred.

[65] Department of Environmental Affairs (DEA) *White Paper for Sustainable Coastal Development in South Africa* (2000).
[66] Ibid at para 5.1.
[67] Ibid at para 5.1.

- Second, coastal management decision should no longer be made in a fragmented and sector-by-sector manner, but rather in a co-ordinated and integrated manner.
- Third, coastal management decision should no longer be taken in a top-down and hierarchical manner, but rather in a bottom-up and facilitatory manner.[68]

Apart from recommending that a new approach should be adopted towards managing the coast, the *White Paper* also recommended that a new legal framework should be adopted. In this respect the *White Paper* began by noting that the existing legal framework suffered from a number of disadvantages, one of which was that it did not make sufficient provision for a system of integrated coastal zone management ('ICZM'). The existing legal framework, therefore, was incapable of implementing the *White Paper*. Given this fact, the *White Paper* suggested that either the Sea-shore Act had to be amended extensively or an entirely new coastal management Act had to be adopted[69]

Following the publication of the *White Paper*, the Department of Environmental Affairs and Tourism commissioned a report to determine whether the Sea-shore Act should be amended or whether an entirely new coastal management Act should be passed. After carefully analysing the legislative framework governing the coast, the report recommended that an entirely new coastal management Act should be adopted and this recommendation was accepted by the Department and ultimately the Cabinet.[70] The process of drafting a new coastal management law began in 2001 and after several lengthy delays the NEM: ICMA was finally passed by Parliament on 23 October 2008.[71]

4.3 The NEM: ICMA

The NEM: ICMA is a comprehensive attempt to create a unified system for governance of the coastal zone. To achieve the goals set out in the *White Paper*, the main purpose of the NEM: ICMA is to create an integrated management system that includes both the coast and

[68] Ibid at para 2.2.
[69] Ibid at para 9.3.
[70] C Cullinan and D Smith *Review of Legal Arrangements required to Implement the White Paper for Sustainable Coastal Development in South Africa* (2000) as quoted in BC Glavovic and C Cullinan "The Coast" in Strydom and King (eds) *Fuggle and Rabie's Environmental Management in South Africa* 2ed (2009) at 895 footnote 60.
[71] For a more detailed discussion of the process that lead to the enactment of the NEM: ICMA see Glavovic and Cullinan *Fuggle and Rabie's Environmental Management in South Africa* (note 70) at 895-896.

estuaries, which includes norms, standards and policies. It confers powers and imposes duties on the State and private persons in relation to coastal areas, and aims to reduce the harmful effects on the sea and the coastal environment through sustainable use of coastal areas, in line with South Africa's international obligations.[72]

The NEM: ICMA is divided into 12 chapters and addresses a host of issues including economic rights, pollution, conservation and the institutional framework. Chapter one defines various concepts including the high and low water marks and sets out its objectives. Section 26 to 29 sets out how the boundaries of the coast are to be determined and adjusted and establishes the duties for national, provincial and municipal government.

Section 34 sets out the details for the protection of estuaries thus strengthening the provisions in the National Water Act 36 of 1998, pertaining to the protection of estuaries. This enhanced support for estuaries will affect developments within such an environment. Chapter 5 establishes the functions and duties and composition of the various levels of government requiring the establishment of a national coastal committee, a provincial lead agency and provincial and municipal coastal committees.[73] Chapter 6 directs how the coast will be managed providing for the establishment of a national coastal management plan, aligned to both provincial and municipal management plans.[74] In keeping with the goal of integrating the public into coastal protection, section 43 allows for voluntary coastal officers.

In line with the requirements of the general duty of care established in NEMA, section 58 establishes a duty of care for the coastal zone.[75] It allows the Minister to determine impacts or activities that may be presumed to cause adverse effects until the contrary is proved. The Minister is provided with wide-ranging powers to issue cease and desist orders and to prohibit, stop, or postpone an activity or remove structures.[76] Section 92 is an innovative

[72] Preamble to the NEM: ICMA.
[73] The institutional arrangements can be located in sections 35 to 42 of the NEM: ICMA.
[74] Section 44 provides for the preparation and adoption of a national coastal management plan, and section 45 sets out the content of such plan. Part 2 of chapter 6 addresses the provincial coastal management plan, and part 3 of the chapter deals with the municipal coastal management plan.
[75] Section 28 of NEMA provides that every person who causes, has caused, or may cause significant pollution or degradation of the environment, must take reasonable measures to prevent such pollution or degradation from occurring ,continuing or recurring . . .'
[76] Sections 58 and 59 provides for the Minister to issue a coastal protection order to prohibit, stop or postpone an activity if he has reason to believe it will cause an adverse effect on the coastal environment, or to issue a coastal access notice if the right of any natural person to use the coastal zone is compromised. Section 60 allows

provision which allows the Minister to 'issue a verbal directive to a responsible person to stay an activity if such activity presents a risk of, or serious danger to the public or potentially significant detriment to the environment'. The verbal directive must be confirmed in writing within seven days'.[77]

The Act provides for the issuing of a number of permits and authorisations, in line with NEMA.[78] The NEM: ICMA has extended the regulation of the discharge of effluent into the sea which was dealt with to a limited extent in the National Water Act (the 'NWA'), and now requires a general permit if the effluent originates from a source on land.[79] Sections 70 and 71 address incineration or dumping at sea and the issuing of dumping permits. These provisions replace the Dumping at Sea Control Act 73 of 1980 (the 'DSCA'), and is extended to include incineration at sea which was not dealt with in the DSCA, and prevents any person from importing any waste or other material to be dumped or incinerated at sea, coastal waters or the EEZ, and prevents exporting of material to be dumped in the high seas or within the jurisdiction of another State. Exceptions are allowed in emergencies. As with the DSCA, dumping permits are required for specific dumping and certain substances are excluded from dumping including radioactive material greater than a certain level.[80] Unlike the DSCA, section 71 of the NEM: ICMA specifies the substances for which a dumping permit may only be issued.[81]

Chapter 9 deals with appeals and chapter 10 with enforcement. The penalties are further reaching than previous laws and a person found guilty is liable to a fine of up to R5m.The success of this provision can only be tested in time. Chapter 11 deals with the general duties and powers of the different authorities and section 12 addresses miscellaneous issues.

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the Minister to remove a structure on or within the Coastal zone. Section 60 allows the Minister to remove a structure on or within the coastal zone.

[77] Section 92 of the NEM:ICMA

[78] Section 63 requires an environmental authorisation in terms of NEMA to be issued where 'the development or activity for which authorisation is sought is, *inter alia,* situated within the coastal public property and is inconsistent with the objective of conserving and enhancing the coastal public property for the benefit of current and future generations; is situated within the CPZ and is inconsistent with the purpose for which such zone is established ;or is situated within coastal access land and is inconsistent with the purpose for which such zone is established...'

[79] Section 69. The section provides for transitional provisions, where a licence was in place before the Act took effect.

[80] Section 71.

[81] Section 71 requires a dumping permit to be obtained for the dumping of sewage sludge, fish waste, inert inorganic geological material and organic material of natural origin.

5. UNCLOS and the Maritime Zones Act

As the next chapter illustrates, the seaward boundaries of the coastal zone rely heavily on the jurisdictional lines/zones set out in the Maritime Zones Act.[82] This Act was passed in order to give effect to the UNCLOS,[83] which South Africa ratified on 23 December 1997. The jurisdictional lines/zones set out in the Maritime Zones Act include, *inter alia*, the 'internal waters', the 'territorial waters', the 'exclusive economic zone' and the 'continental shelf'.

All of these zones are determined from the 'normal baselines' of the Republic which the UNCLOS defines as 'the low water line along the coast as marked on large-scale charts officially recognised by the coastal nation state'.[84] The Maritime Zones Act defines the baseline as including both the low-water line and straight baselines.[85]

The internal waters refer to the waters landward from the baselines as well as all harbours, estuaries and coastal lagoons. The State enjoys sovereign authority over these waters. However, the right of innocent passage does not apply to the internal waters, except in certain rare circumstances.[86] These international principles have been domesticated by the Maritime Zones Act. Section 3 provides in this respect as follows:

'(1) The internal waters of the Republic shall comprise:
  (a) all waters landward of the baselines; and
  (b) all harbours.
(2) Any law in force in the Republic, including the common law, shall also apply in its internal waters and the airspace above.
(3) The right of innocent passage shall not exist in the internal waters, except if the internal waters concerned were territorial waters before the commencement of this Act'.

The territorial waters consist of the sea up to 12 nautical miles from the baselines. Like the internal waters, the State enjoys sovereignty over the territorial waters. Unlike the internal

[82] 15 of 1994.
[83] United Nations Convention on the Law of the Sea 21 ILM 1261 (1982). Available at: http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm, accessed on 11 January 2016.
[84] See Article 5 of the UNCLOS.
[85] See section 2 of the Maritime Zones Act.
[86] See Articles 5 and 8 of the UNCLOS. For a discussion of what is meant by the right of innocent passage see J Glazewski 'An overview of International Law and South African Law relevant to Plutonium Shipments' (1994) 49 *Transactions of the Royal Society of South Africa* 237.

waters, however, the right of innocent passage does apply to the territorial waters.[87] Once again these international principles have been domesticated by the Maritime Zones Act. Section 4 provides in this respect as follows:

'(1) The sea within a distance of twelve nautical miles from the baselines shall be the territorial waters of the Republic.

(2) Any law in force in the Republic, including the common law, shall also apply in its territorial waters and the airspace above its territorial waters.

(3) The right of innocent passage shall exist in the territorial waters'.

Finally, the exclusive economic zone (the 'EEZ') consists of the sea up to 200 nautical miles from the baseline. While the State does not enjoy sovereignty over the area itself, it does enjoy sovereignty over the natural resources located within the zone. All other States have the right of innocent passage and the right to lay submarine cables and pipelines.[88] Section 7 of the Maritime Zones Act provides in this respect that:

'(1) The sea beyond the territorial waters referred to in section 4, but within a distance of two hundred nautical miles from the baseline, shall be the exclusive economic zone of the Republic.

(2) Subject to any other law the Republic shall have, in respect of all natural resources in the exclusive economic zone, the same rights and powers it has in respect of the territorial waters'.

6. Other Roman law concepts

While the coast is often seen as a stable and permanent natural feature, in reality this is not true. In reality the coast is in fact a dynamic area that is constantly changing in response to natural processes and human activities. The constant changes in the natural features of the coast can give rise to legal difficulties when it comes to determining the boundaries of the coast and especially the location of the high-water mark.

In order to deal with these difficulties, the Roman jurists developed a number of concepts. Among these is alluvion or invisible accretion (*alluvio*) and avulsion or visible accretion

[87] See Article 17 of the UNCLOS.
[88] See Articles 56 and 58 of the UNCLOS.

(*avulsio*). Both alluvion and avulsion are original methods of acquiring ownership of land though the accession of land to land.[89]

Alluvio occurs when small amounts of mud, silt or soil are gradually and unnoticeably added to land that is classified as an *ager non limitatus* through the natural action of a public and non-navigable river or the sea. The owner of the *ager non limitatus* becomes the owner of the mud, silt or soil as soon as it has been deposited on his or her land. [90]

Given that alluvion applies only to land that is classified as an *ager non limitatus*, it is important to distinguish between *agri non limitati* and *agri limitati*. If one or more of the boundaries of a piece of land is a public river or the seashore it is, subject to certain exceptions, an *ager non limitatus*. If all of the boundaries of a piece of land are artificial it is an *ager limitatus*.[91]

Avulsion occurs when a substantial piece of soil is suddenly and noticeably added to land that is classified as *agri non limitati* as a result of the violent and natural action of a public and non-navigable river or the sea. The owner of the *argus non limitatus* becomes the owner of the piece of soil when it becomes firmly attached to his or her land, which usually occurs when plants take root.[92]

It is important to note that where the owner of the *ager non limitatus* helps the process of alluvion or avulsion by, for example, building a dyke, he or she will not become the owner of the mud, silt or soil. The addition of the mud, silt or soil must stem from the natural actions of the river or the sea.[93]

7. Conclusion

This chapter illustrates how through the years, more attention was gradually drawn to the management of the coast, particularly the determination of jurisdictional boundaries,

[89] See CG van der Merwe and A Pope 'Ownership' in F du Bois (ed) *Wille's Principles of South African Law* 9ed (2007) at 494-495
[90] Ibid. For a useful discussion of the difference between an *ager non limitatus* and an *ager limitatus* see *Durban City Council v Minister of Agriculture* 1982 (2) SA361 (D) at 369.
[91] Ibid.
[92] Ibid.
[93] See *Colonial Government v Town Council, Cape Town* 1902 (19) SC 87.

culminating in the dawn of a new era with the Maritime Zones Act. This Act set the parameters of the seaward boundaries. It gave effect to South Africa's international commitments, and the NEM: ICMA which speaks to the objectives of NEMA and the Constitution, absorbs Roman law concepts, and provides an integrated approach to coastal management.

CHAPTER FIVE: THE COASTAL BOUNDARIES

1. Introduction

Having set out the legal and policy framework governing coastal management in South Africa, we may now turn to consider the manner in which the coastal zone is actually defined in the National Environmental Management: Integrated Coastal Management Act (the 'NEM: ICMA').[94]

The coastal zone is defined in section 1 of the NEM: ICMA as the 'area comprising coastal public property, the coastal protection zone, coastal access land, coastal protected areas, the seashore and coastal waters, and includes any aspect of the environment on, in, under and above such area'.

The different components of this definition are dealt with in much greater detail in Chapter 2 of the Act. This chapter is divided into seven parts, namely:

- Part One: Coastal Public Property;[95]
- Part Two: Coastal Protection Zone;[96]
- Part Three: Coastal Access Land;[97]
- Part Four: Coastal Waters;[98]
- Part Five: Coastal Protected Areas;[99]
- Part Six Special Management Areas;[100] and
- Part Seven: Coastal Management Lines.[101]

For the purposes of this dissertation, however, coastal public property, the coastal protection zone and coastal access land are the most important components. Each of these components will be discussed in turn.

[94] 24 of 2008.
[95] Sections 7 to15.
[96] Sections 16 and 17.
[97] Sections 18 to 20.
[98] Section 21.
[99] Section 22.
[100] Section 23 to24.
[101] Section 25.

2. Coastal Public Property

2.1 Introduction

As Freedman has pointed out, the term 'coastal public property' replaces the 'sea' and the 'sea-shore' and from a property law perspective may be classified as a new thing or *res*. This new thing, which is defined in much greater detail than the 'sea' and the 'sea-shore', is made up of a number of different components.[102] These components are set out in section 7 of the Act and may be divided into three categories.

First, those components located on the seaward side of the area. These are:

(a) coastal waters,[103]

(b) land submerged by coastal waters, including:

  (i) land flooded by coastal waters which subsequently comes part of the bed of coastal waters;[104] and

  (ii) the substrata beneath such land;[105]

(c) any natural island within the coastal waters.[106]

Second, those components located on the landward side of the area. These are:

(a) the sea-shore, including:

  (i) the sea-shore of natural or reclaimed island;[107]

  (ii) the seashore of reclaimed land;[108]

(b) subject to section 66A, any admiralty reserve owned by the State;[109]

(c) any State land that is declared in terms of section 8 of the Act to be coastal public property;[110] and

(d) any land that has been reclaimed from the sea.[111]

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[102] See Freedman *Environmental Law in South Africa* (note 24) at 11-23.
[103] Section 7(1)(a).
[104] Section 7(1)(b)(i).
[105] Section 7(1)(b)(ii).
[106] Section 7(1)(c).
[107] Section 7(1)(d)(i).
[108] Section 7(1)(d)(ii).
[109] Section 7(1)(e).
[110] Section 7(1)(f).
[111] Section 7(1)(g).

Third, any natural resources on or in any of the components of coastal public property set out above.[112]

Apart from identifying those components that are included in coastal public property, the Act also excludes certain components from coastal public property. These are:

(a) any immovable structure or installation which is located in a port or harbour either on land or the seabed and which was lawfully constructed by an organ of state;[113]

(b) any portion of the sea-shore below the high-water mark which was lawfully alienated before the Act took effect;[114]

(c) any portion of an island that was lawfully alienated before the Act took effect;[115] and

(d) any portion of a coastal cliff that was lawfully alienated before the Act took effect and which is not owned by the State.[116]

The decision to exclude 'any immovable structure or installation which is located in a port or harbour either on land or the seabed and which was lawfully constructed by an organ of state'[117] from the definition of coastal public property was taken in response to concerns raised by Transnet after the NEM: ICMA was initially passed.

When the NEM: ICMA was initially passed immovable structures and installations located in ports and harbours which had been lawfully constructed by Transnet were not excluded from the definition of coastal public property.[118] Given that section 11 of the NEM: ICMA vested ownership of coastal public property in the 'citizens of South Africa',[119] this meant that as soon as the Act came into operation the ownership of these structures and installations would no longer be vested in Transnet, but rather in the citizens of South Africa.[120]

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[112] Section 7(1)(h).
[113] Section 7(2)(a). A harbour is defined in section 1 of the Act as 'a harbour proclaimed in terms of any law and managed by an organ of state.' and a post is defined in the same section as 'a port as defined in the National Ports Act, 2005 (Act No.12 of 2005) '.
[114] Section 7(2)(b).
[115] Section 7(2)(c).
[116] Section 7(2)(d).
[117] See footnote 113 above.
[118] Section 7h(iii).
[119] Section 11(1) of NEM:ICMA
[120] See Department of Environmental Affairs presentation to National Council of Provinces Select Committee on Land and Mineral Resources *Exclusion from coastal public property in terms of section 27(4) of the NEM: ICMA* (2009). Available at: https://pmg.org.za/committee-meeting/9890/, accessed 8 September 2015. Section 11(1) reads as follows: 'The ownership of coastal public property vests in the citizens of the Republic and coastal public property must be held in trust by the state in behalf of the citizens of the Republic'.

In order to avoid losing ownership of their structures and installations, Transnet argued, amongst other points, that the definition of coastal public property should be amended to protect its property interests. These arguments were largely accepted and the definition of coastal public property was amended in 2014 to expressly exclude 'any (i) immovable structure, or part of an immovable structure; or (ii) installation or infrastructure located in a port or harbour, whether located on land or the seabed, lawfully constructed by an organ of state'.[121]

Apart from arguing that the definition of coastal public property must be amended to protect its property interests, Transnet also argued that the definition of a harbour and a port must be amended to clearly 'include existing ports and make a distinction between commercial ports and harbours'. Once again, these arguments were largely accepted and a harbour is now defined as 'a harbour proclaimed in terms of any law and managed by an organ of state'[122] and a port is defined as 'a port as defined in the National Ports Act, 2005 (Act No.12 of 2005)'.[123]

2.2 Coastal waters and the sea-shore

Freedman points out that coastal waters and the seashore are the most important parts of the definition of coastal public property. This is because, in most cases, they will determine the landward and seaward parameters of coastal public property.[124]

The coastal waters are thus defined in section 1 as the 'internal waters, territorial waters, exclusive economic zone and continental shelf of the Republic referred to in sections 3, 4, 7

[121] Section 7(2)(a). Section 7 of the NEM: ICMA was amended by section 5 of the National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014.
[122] Section 1. This definition was inserted by section 1(p) of the National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014.
[123] Section 1. This definition was inserted by section 1(u) of National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014. The National Ports Act in chapter1, section 1(1) defines A port is defined in section 1 of the National Ports Act to mean any ports of Richards Bay, Durban, East London, Ngqura, Port Elizabeth, Mossel Bay, Cape Town, Saldanha Bay, Port Nolloth or a port which has been determined as such in terms of section 10(2) of the Act. Section 10(2) allows for the Minister to include ports in addition to the ports referred to in section 1.
[124] W Freedman, 'On the Beach: The legal status of the Sea and the Seashore in light of the National Environmental Management :Integrated Coastal Management Act 24 of 2008' in MA Kidd and SV Hoctor, (eds) *Celebrating 100 years of teaching law in Pietermaritzburg* (2010) 275 at 287.

and 8 of the Maritime Zones Act, 1994 (Act 15 of 1994), and an estuary'; and the sea-shore as '. . . the area between the low-water mark and the high-water mark'.[125]

The low-water mark is defined as 'the lowest line to which coastal waters recede during spring tides', and the high-water mark as 'the highest line reached by coastal waters, but excluding any line reached as a result of exceptional or abnormal weather or sea conditions; or an estuary being closed to the sea'.[126]

The manner in which the high-water mark is defined in the NEM: ICMA is slightly different from the manner in which it was defined in the Sea-shore Act and the common law. As we have already seen, the high-water mark was defined in the Sea-shore Act as 'the highest line reached by the water of the sea during ordinary storms occurring during the stormiest period of the year, excluding exceptional or abnormal floods' and in the common law as 'the furthest line reached by the sea during ordinary winter storms, excluding an abnormal or exceptional flood'. The use of the phrase 'exceptional or abnormal weather or sea conditions', rather than abnormal or exceptional floods', might indicate that the NEM: ICMA applies to a slightly broader area.[127]

Given that the high-water mark is a continuously moving line and, therefore, is precise only for the moment that it is determined, it is possible for the high-water mark to move either landward or seaward and thus affect the size of a littoral owner's property. The NEM: ICMA contains provisions that are intended to deal with these possibilities. Section 14(5) of the Act provides in this respect that if the high-water mark moves inland of the boundary line of a land unit due to erosion of the coast, sea-level rise or any other cause, the owner of that land unit loses ownership of any portion of that land unit, that is situated below the high-water mark.[128] In addition, it also provides that the landowner is not entitled to compensation from the State, unless the movement of the high-water mark was caused by an intentional or

[125] Section 1.
[126] Section 1.
[127] The NEM: ICMA itself does not explain how the high-water mark must be identified. Instead, the process that must be followed is governed by the Land Survey Act 8 of 1997. In practice, 'the land surveyor does not wait for the stormiest period, but examines the terrain, vegetation and debris to determine the location of the high-water mark'.
[128] Section 14(5)(a).

negligent act or omission by an organ of state and was a reasonably foreseeable consequence of that act or omission.[129]

Although the landward boundary of coastal public property is based primarily on the high-water mark, the process of identifying the high-water mark has not been carried out on a large scale and there are no official maps that accurately depict the high-water mark. This means that it may be difficult in practice for a person to determine whether he or she is bound by the obligations imposed by the Act. This could be particularly problematic in those cases where the obligation is enforced by means of a criminal sanction.[130]

In order to address problems that may arise when it comes to locating the line of the high-water mark, the NEM: ICMA allows for the Minister to determine or adjust the boundaries of coastal public property by following the procedure laid down in section 27 of the Act. These procedures are set out and discussed in more detail below**.**

Apart from coastal waters and the sea-shore, there are other sections of the definition of coastal public property that deserve a bit more scrutiny namely admiralty reserves, state land declared to be coastal public property and reclaimed land.

2.3 Admiralty reserves

Section 7(e) of the NEM: ICMA provides that coastal public property includes 'any admiralty reserve owned by the State'.[131] An admiralty reserve is defined in section 1 of the Act as 'any strip of land adjoining the inland side of the high-water mark which, when this Act took effect, was State land reserved or designated on an official plan, deed of grant, title deed or any other document evidencing title or land-use rights as "admiralty reserve", "government reserve", "beach reserve", "coastal forest reserve" or other similar reserve.' [132]

[129] Section 14(5)(b).
[130] Section 80 provides for both fines and imprisonment for offences committed under the Act.
[131] Section 66A as amended in 2014. The decision to include admiralty reserves in coastal public property is subject to the provisions of section 66A. This section provides that 'a lease in an Admiralty reserve prior to the commencement of this section must be managed by an organ of state empowered to do so. . .' notwithstanding the provisions of section7 (1) (e).
[132] Section 1(1).

As Glazewski points out, these areas came into existence in the second half of the eighteenth century when the original deeds of grant (both quitrent and freehold) were issued for coastal land in the Cape and Natal colonies by their respective colonial governments.[133] A specific clause was included in these original deeds of grant reserving ownership of the admiralty reserve for the government. A typical clause, Glazewski points out further, would read as follows: 'a strip of land two hundred feet in width above the high-water mark is reserved by the Government'.[134]

An important problem that this historical process of creating admiralty reserves gives rise to is that they were not always surveyed and neither did they have separate diagrams. In addition, the Deeds Office has not compiled a general map or inventory of state land so there is no readily available method of locating admiralty reserves. In order to locate all of the admiralty reserves that exist along the coast, therefore, a thorough search of the original deeds of grant issued during the relevant period would have to be undertaken. The original deed would then have to be followed all the way through to the present day to ensure that the state has not abrogated or alienated its rights.[135]

According to Glazewski it is not entirely clear what the original purpose of reserving the admiralty strips was. One explanation is that they were created in order to grant the Crown jurisdiction over flotsam and jetsam that was washed ashore as a result of shipwrecks in the days of the old sailing vessels.[136] Another explanation is that they were created for defence purposes, for example, to allow for the landing of troops.[137] A more colourful explanation is that a man who was saved from drowning in Durban Bay advised the Surveyor-General at the time to reserve ownership of all goods washed up on the shore for the State after 300 gold sovereigns were found attached to his belt.[138]

[133] J Glazewski 'The Admiralty Reserve – An Historical Anachronism or a Bonus for Conservation in the Coastal Zone' 1986 *Acta Juridica* 193.
[134] Ibid at 194. Apart from being included in the original deed of grant, admiralty reserves were also created when land adjoining the sea-shore was surveyed for the first time and admiralty reserves were set aside in the plans for each lot by the original surveyor.
[135] Ibid at 194.
[136] Ibid at 194
[137] Ibid at 195.
[138] Ibid at 195.

Whilst the original purpose of the admiralty reserve remains unclear, Glazewski argues that they can fulfil a valuable conservation function today and the drafters of the NEM: ICMA appears to have accepted this argument.[139]

The fact that admiralty reserves, which are adjacent to and inland of the high-water mark, are included in the definition of coastal public property helps promote an ecosystem based approach and allows for management of the area to be more integrated. The area is viewed as a management zone, as opposed to a conservation area, providing the opportunity to pursue the goal of equity in addition to commercial and conservation strategies.[140]

2.4 State land declared to be coastal public property

Section 7(f) of the NEM: ICMA provides that coastal public property includes 'any land owned or controlled by the state declared under section 8 to be coastal public property'. Section 8 goes on to provide that '[t]he Minister may . . . declare any state-owned land as coastal public property for the purposes set out in section 7A'.[141]

Section 7A presents that the aim of coastal public property is to:

(a) improve public access to the seashore;
(b) protect sensitive coastal ecosystems;
(c) secure the natural functioning of dynamic coastal processes;
(d) protect people, property and economic activities from risks arising from dynamic coastal processes, including the risk of sea-level rise; and
(e) facilitate the achievement of any of the objects of the NEM: ICMA.

Before the Minister may declare state-owned land as coastal public property, he or she must consult with interested and affected parties and obtain the concurrence of the Minister, or of the MEC of the province, responsible for managing that state-owned land.[142]

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[139] Ibid at 195. See also W Forse, C Saunders and A de Klerk *Update of the Admiralty Reserves in KwaZulu-Natal* (2008) at 8. Available at: http://www.kznpdc.gov.za/LinkClick.aspx?fileticket=AsvlZWvfG44%3D&tabid=131&mid=512, accessed on 12 January 2016.
[140] Ibid at 37.
[141] Section 8(1).
[142] Section 8(2).

Besides declaring state-owned land as coastal public property, the Minister, acting with the concurrence of the Minister of Land Affairs, may also acquire private property for the purpose of declaring it to be coastal public property by purchasing the land, exchanging the land for other land or expropriating the land.[143]

State owned land declared to be coastal public property and private land acquired for the purpose of declaring it to be coastal public property, may be located adjacent to and inland of the high-water mark. Like admiralty reserves, therefore, the fact that these two types of land have been included in the definition of coastal public property also helps promote an ecosystem based approach.

2.5 Reclaimed land

When the NEM: ICMA was first passed it did not contain any provisions that dealt explicitly with the reclamation of land from the sea. Following extensive amendments to the Act in 2014 it now contains a number of provisions that explicitly deal with the reclamation of land from the sea.[144] These provisions are set out in sections 7B and 7C. The reclamation of land from the sea is defined in section 1 as 'the process of artificially creating new land within coastal waters, and includes the creation of an island or a peninsula, but excludes beach replenishment by sand pumping for maintenance purposes'.

Section 7B deals with the reclamation of land for the purpose of constructing state infrastructure and sets out a two phase process to follow to make an application to reclaim land.[145] The original Act did not provide for the process to be followed to reclaim land, and such land remained as coastal public property. Whilst Transnet was unhappy that reclaimed land was owned as State land, it argued that the reclaimed land should vest in the 'organ of state'. Section 7B has been included in the NEM: ICMA to clarify the process of land reclamation for state infrastructure requiring the applicant to first obtain pre-approval before the environmental impact assessment is pursued.

[143] Section 9(1). Section 9(2) provides that 'land may be acquired in terms of [section 9(1)] only if it is being expropriated for a purpose set out in [section 7A]'.
[144] See the National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014.
[145] Section 7B(3) sets out the steps to obtain a pre-approval before an environmental authorisation can be considered. It requires the applicant to ensure that no other land can be used, and if other land is available, why such land cannot be used for the same purpose.

Reclaimed land will vest in the organ of State that made the application, and must be used for the specific purpose that was motivated in the original application for such reclamation of land.[146] Caution must be applied that the reclaimed land is not simply vested in the applicant as the State is not necessarily an applicant alone. Development of the Durban marina for example is a joint partnership between a developer and the municipality. As it stands, the reclaimed land balances the interest of the public against the economic interest of the State. In Dubai for example reclaimed land is developed through private partnerships which can open a loophole for abuse of the system.[147]

Section 7C provides for the reclamation of land for purposes other than State infrastructure in exceptional circumstances which do not conflict with the purposes of coastal public property.[148] This process requires pre-approval by the Minister, followed by a consultation process and referral to Parliament by the Minister for ratification. Only after Parliaments ratification, will the process of environmental authorisation occur. If Parliament rejects the application, the Minister's pre-approval falls away. Conditions may be attached to the permission to reclaim but under no circumstances can the reclaimed land be sold.[149] Whilst the criteria and the process appear to be stringent 'exceptional circumstances' is bound to create problems of interpretation given the open-ended nature of the criteria.

The fact that the State owns the property becomes irrelevant, if private reclamation is allowed for commercial expansion[150]. Until the Amendment Act of 2014, only the Minister's consent was required for reclamation. Reclamation may also occur in respect of activities like the building of jetties, or islands or minor activities like a slipway. It was argued that such a process should require more than an EIA and a permit must be a requirement. The first Draft Amendment Bill did not provide for procedures that needed to be followed to apply for reclamation of land, whereas subsection 7A(3) in the second Amendment Bill sets out factors that the Minister must consider to grant authorisation.[151] This position has been affirmed in

[146] Section 7B.
[147] See Portfolio Committee on Water and Sanitation *Deliberations on the NEM: ICM Bill (B8-2013)* at its meeting dated 21 August 2013. Available at: https://pmg.org.za/committee-meeting/16235/, accessed on 12 January 2016.
[148] Section 7C.
[149] Section 7C.
[150] See Portfolio Committee on Water and Sanitation *Deliberations on the NEM: ICM Bill (B8-2013)* at its meeting dated 21 August 2013. Available at: https://pmg.org.za/committee-meeting/16235/, accessed on 12 January 2016.
[151] Ibid.

the Amendment Act. This section was viewed as being limiting, and it did not explain the effect that the reclamation of land will have on other organs of State that own assets that operate in coastal public property.

2.6 Aim of coastal public property

The objectives of coastal public property have been expressly set out in section 7A of the NEM: ICMA.[152] The legislator deemed it necessary to specifically include the objectives when the Act was amended in 2014, and the objectives clearly emphasise the integrated ecosystem approach.

3. Coastal protection zone

Apart from coastal public property, the NEM: ICMA makes provision for another new geographic area known as the 'coastal protection zone'. The area encompassed by this zone is defined in section 16 of the Act.

Section 16 provides in this respect that the coastal protection zone encompasses a strip of land that extends 1 km inland from the high-water mark in those areas that were zoned for agricultural or undetermined use, or were not zoned, or did not form part of a lawfully established township, urban area or human settlement when the Act came into effect;[153] and 100 metres inland from the high-water mark in all other areas.[154]

In addition, section 16 goes on to provide that the coastal protection zone embraces areas that are very important to protecting the environment and includes:

(a) any area declared to be a sensitive coastal area in terms of the ECA;[155]

(b) any part of the littoral active zone that is not coastal public property;[156]

(c) any coastal protected area or part thereof that is not coastal public property;[157]

(d) any coastal wetland, lake, lagoon, river or dam that is situated wholly or partly within the one kilometre or 100 metre boundary referred to above;[158]

[152] Section 7A.
[153] Section 16(1)(d).
[154] Section 16(1)(e).
[155] Section 16(1)(a).
[156] Section 16(1)(b).
[157] Section 16(1)(c).

(e) any part of a river that is situated wholly or partially within the one kilometre or 100 metre boundary referred to above;[159]

(f) any part of the sea-shore which is not coastal public property;[160]

(g) any admiralty reserve which is not coastal public property;[161] and

(h) any land adjacent to any of the areas set out above that would be inundated by a 1:100 year flood or storm.[162]

The aim of the coastal protection zone is set out in section 17 of the NEM: ICMA, which provides in this respect that the purpose of the coastal protection zone is to provide for the specific management of the land which is contiguous with coastal public property that plays a significant role in the coastal ecosystem so that the coastal protection zone can, *inter alia*:

(a) protect the ecological integrity and natural character of coastal public property;[163]

(b) protect the economic, social and aesthetic value of coastal public property;[164]

(c) avoid increasing the effect or severity of natural hazards in the coastal zone;[165]

(d) protect people, property and economic activities from risks arising from dynamic coastal processes, including the risk of sea-level rise;[166]

(e) maintain the natural functioning of the littoral active zone;[167]

(f) maintain the productive capacity of the coastal zone by protecting its ecological integrity;[168] and

(g) make land near the sea-shore available to organs of state and other authorised persons for performing rescue operations and temporarily depositing objects washed up by the sea.[169]

Like coastal public property, the parameters of the coastal protection zone may be determined or adjusted by following the procedure set out in section 27 of the Act. Unlike coastal public property, however, the power to determine or adjust the boundaries of the coastal protection

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[158] Section 16(1)(f).
[159] Section 16(1)(fA).
[160] Section 16(1)(g).
[161] Section 16(1)(h).
[162] Section 16(1)(i).
[163] Section 17(a).
[164] Ibid.
[165] Section 17(b).
[166] Section 17(c).
[167] Section 17(d).
[168] Section 17(e).
[169] Section 17(f).

zone is vested in the MEC except in the case of section 28(4) where the Minister performs this function after consultation with the MEC.[170]

It is significant to note that the definition of the coastal protection zone does not refer specifically to proclaimed fishing harbours. Proclaimed fishing harbours are located within a hundred meters of the high-water mark. Advocates for their exclusion from the coastal protection zone argue that the difficulty that the inclusion of these harbours in the coastal protection zone gives rise to is the level of public engagement required in terms of the environmental assessment which hinders the development of these areas.[171]

Section 63(1) of the NEM: ICM expects EIAs to contribute to the decision-making for any development to occur in the coastal protection zone. It is proposed that a different set of rules apply to these developments. Given the nature of this area, the argument is that the value derived from the EIA process is to inform the developer in understanding the impacts and assist the authorities in the assessment. The value of input provided by the private property owners in its vicinity is often adversarial and offers no real contribution relating to actual impacts on the environment.[172]

The fact that proclaimed fishing harbours are in a protected area means that they should have been dealt with in the description of the coastal zone at some level. Critics argue that it would seem that the NEM: ICMA in its design of the coastal zone provides more focus on private property developments than it considers promoting balancing the ecological and socio-economic factors. Ultimately promoting reasonable development within the proclaimed fishing harbour helps growth in the economy.[173]

4. Coastal access land

The third new geographic area created by the NEM: ICMA is 'coastal access land'. Unlike coastal public property and the coastal protection zone, the Act itself does not define the area

[170] Section 27.
[171] S van Wyk *A critical analysis of the NEM: ICMA as it pertains to development within the Coastal Protection Zone of Proclaimed Fishing Harbours in the Western Cape* (2013) at 9. Available at: http://www.aurecongroup.com/~/media/Files/Downloads-Library/2012/National-Environmental-management.pdf, accessed on 11 January 2016.
[172] Ibid.
[173] Ibid.

encompassed by coastal access land. Instead, section 18 simply imposes an obligation on coastal municipalities to make by-laws that designate strips of land as coastal access land in order to secure public access to coastal public property.[174]

Coastal access land, section 18 of the NEM: ICMA goes on to provide, is 'automatically subject to a public servitude in terms of which members of the public may use that land to gain access to coastal public property'.[175] Section 18(3) provides that the municipality may allocate coastal access subject to 'the provisions of the Act including prohibitions or restrictions referred to coastal management programmes and any prohibitions in terms of section 13(2) or any other national or provincial legislation'.[176] No land within a port or harbour, defence or other strategic facility may be designated as a coastal access land without the consent of the Minister responsible for that facility.[177]

If a municipality fails to designate coastal access land, then the MEC, and failing the MEC, the Minister, may designate such land by notice in the *Gazette*.[178] An MEC, however, may not exercise this power without first consulting the municipality and giving it a reasonable opportunity to make representations[179] and neither may the Minister do so without consulting both the MEC and the municipality and giving them a reasonable opportunity to make representations.[180]

Section18 also provides that whenever a municipality approves the rezoning, subdivision or development of land abutting coastal public property it must ensure that provision is made in the conditions of approval for public access.[181]

Apart from conferring the power to designate coastal access land on coastal municipalities, the NEM: ICMA also sets out the principles a municipality must comply with, and the procedure it must follow, when it exercises this power. In those cases where a municipality

[174] Section 18(1).
[175] Section 18(2) provides that land allocated in subsection (1) is automatically subject to a public servitude, which means that the servitude need not be registered in the Deeds office. .
[176] Section 18(3). Section 13(2) allows access to coastal public property to be prohibited or restricted where it forms a part of protected property or where it is in the interest of the whole community, the interest of national security, or to protect the environment.
[177] Section 18(4). Section 18(5) provides for the withdrawal of coastal access land.
[178] Section 18(6).
[179] Section 18(7).
[180] Section 18(8).
[181] Section 18(9).

has designated coastal access land, the Act also imposes certain obligations on the municipality.[182] Section 20 comprehensively sets out duties for the municipalities. This section provides that a municipality in whose area coastal access land falls must:

'(a) signpost entry points to coastal access land;

(b) control the use of, and activities, on that land;

(c) protect and enforce the rights of the public to use the land to gain access to coastal public property;

(d) maintain that land so as to ensure that the public has access to the relevant coastal public property;

(e) where appropriate . . ., provide facilities . . . including parking areas, toilets, boardwalks and other amenities . . .;

(f) ensure that the provision and use of coastal access land and associated infrastructure does not cause adverse effects to the environment;

(g) remove any public access servitude that is causing or contributing to adverse effects that the municipality is unable to prevent or to mitigate adequately;

(h) describe . . . all coastal access land in any municipal coastal management programmes and in any municipal spatial development framework . . .;

(i) perform any other action that may be prescribed; and

(j) report to the MEC . . . on the measures taken to implement this section.'[183]

5. Determining or adjusting coastal boundaries

Chapter 3 of NEM: ICMA addresses the challenge of determining the high-water mark by allowing for boundaries to be adjusted and sets out the process to follow when making the adjustments. Because these boundaries are arbitrary and can exclude parts of the ecosystem, the Act provides mechanisms to deal with the dilemma. Section 26 sets out the authority afforded to the different structures to adjust boundaries where necessary. As indicated above, the MEC of the province has the power to alter a boundary of the coastal protection zone except in the case of the three circumstances set out in section 26 where the Minister's intervention is required[184] and in respect of coastal public property the Minister adjusts the boundaries as the need arises. The Minister has the power to also adjust the boundaries of Special Management Areas and boundaries of coastal access land may be adjusted by the municipality that has jurisdiction over the area.[185] By adjusting the boundary it may become

[182] Section 20.
[183] Section 20.
[184] Section 26.
[185] Section 26(1).

necessary for further portions of the area to be included within the coastal protection zone or coastal access land, hence the Act allows for such changes to occur.[186]

A boundary may only be adjusted if 'it is uncertain or undefined, is the subject of disputing claims or has shifted due to natural or artificial processes'.[187] Within such adjustment, the Minister may include connecting boundaries of the coastal protection zone or coastal access land. In executing this function, the MEC must be guided by specific procedures that must be followed and points to be taken into account. These powers are very wide and are open to constitutional challenge. The Minister as opposed to the MEC is responsible for this task in consultation with the MEC to make such decision where the coastal protection zone is a national protected area under the Protected Areas Act;[188] exists between two provinces; or extends to or between the borders of the Republic.[189]

Section 27 referring to the alteration of boundaries, considers the vacillating and fragile nature of the shoreline, the coastal processes to include the littoral active zone and sensitive coastal ecosystems, including coastal wetlands,[190] and sea-level rise, the need to suitably provide for the recurrent natural changes in the high water mark and erosion and accretion of the sea shore and 'any other factor that may be prescribed'.[191] The provision of 'any other factor that may be prescribed',[192] and the additional provision 'any anthropogenic influences on dynamic coastal processes',[193], is open-ended and arguably provides the authorities with a wide mandate regarding their power to adjust the coastal boundary which may open itself to claims against the State by those affected negatively by such adjustments.

On the other hand, the provision must be seen as being dynamic and adequately flexible to allow the authorities to act expeditiously and create further protective boundaries, where necessary.[194]

[186] Section 26(2).
[187] Section 26(3).
[188] 57 of 2003.
[189] Section 26(6).
[190] Section 27(1)(c).
[191] Section 27(1)(a) and(b).
[192] Section 27(1) (e)(dA).
[193] Section 27(dA).
[194] Ibid.

Section 28 deals specifically with determining and adjusting coastal boundaries of the coastal protection zone.[195] Areas such as Durban and Sea Point in Cape Town have highly developed coasts and the 100 meters boundary may need to be reduced. The volatile nature of the coast was seen in the 2007 floods in KwaZulu-Natal with the rampant destruction of its coastline. In other circumstances, estuaries where tidal influence extends further inland, the width of a coastal buffer may be extended beyond the one kilometre prescription. Section 28(2) provides for the Minister to include land that is not adjacent to the coastal public property. This indirectly supports the establishment of development setback lines. Some of the factors to be taken into account include consideration of the risks of natural hazards, and the purpose for which the protection zone is created beyond the coastal property. The adjustment to the coastal protection zone boundaries must not alter the boundaries of coastal public property. Where the boundaries need adjustment between provinces or up to or between borders of the Republic or in the case of a protected area under the Protected Areas Act, the right is exercised by the Minister in consultation with the MEC.[196]

6. Conclusion

As established above, a comprehensive, expansive and flexible legal definition has been provided for the coastal zone. The creation of special management lines and coastal management lines, are mechanisms that further enhance the definition to give effect to the objectives of the legislation and to absorb changes that may occur in the environment. A comprehensive analysis of the definition will follow in the next chapter.

[195] Section 28.
[196] Section 28. In terms of this section the Ministers acts after consultation with the relevant MEC.

CHAPTER SIX: ANALYSIS AND CONCLUSION

1. Introduction

As we have already seen one of the few significant differences between the integrated coastal management ('ICZM') and the ecosystem-based ('EsA') approaches is that while the ICZM approach tends to focus on the manner in which a particular biophysical or ecological space should be managed and the types of governance institutions and processes that are required, the EsA approach tends to focus on the nature and extent of the biophysical or ecological space that must be managed.

In addition, we have also seen that even though this difference is relatively minor it does provides us with a useful criterion for determining whether the manner in which the coastal zone has been defined in the NEM: ICMA facilitates an integrated and especially ecosystem based approach to managing the South African coast. This criterion is whether the various boundaries that delineate the landward and seaward boundaries of the coastal zone are based primarily on ecological and physical considerations or legal and managerial considerations.

When it comes to applying this criterion a distinction should be drawn between the seaward boundaries of the coastal zone and then the landward boundaries.

2. Seaward boundaries

Unlike the boundaries on the landward side of the coastal zone, the boundaries on the seaward side are governed by the United Nations Convention on the Law of the Sea (the 'UNCLOS').[197] As we have already seen, the UNCLOS distinguishes, *inter alia*, between the 'internal waters', the 'territorial seas', and the 'exclusive economic zone'.[198]

[197] United Nations Convention on the Law of the Sea 21 ILM 1261 (1982). Available at: http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm, accessed on 11 January 2016. South Africa ratified the UNCLOS on 5 December 1984.

[198] Part 1 of the UNCLOS defines the internal waters, Part 2 deals specifically with the territorial sea and Part 4 with the exclusive economic zone.

Given that South Africa has not only signed and ratified the UNCLOS, but has also domesticated its provisions through the enactment of the Maritime Zones Act,[199] it is not surprising that the boundaries delineated by the NEM: ICMA on the seaward side of the coastal zone are based on the jurisdictional lines created in terms of the UNCLOS and the Maritime Zones Act. The same approach is followed in most other coastal nations.[200]

The boundaries delineated by the NEM: ICMA on the seaward side of the coastal zone may be found in the definition coastal public property and particularly in the definition of 'coastal waters', which is the key component on the seaward side of coastal public property. Coastal waters are defined in section 1 of the Act as the 'internal waters, territorial waters, exclusive economic zone and continental shelf of the Republic referred to in sections 3, 4, 7 and 8 of the Maritime Zones Act, 1994 (Act 15 of 1994), and an estuary'[201].

Strictly speaking these jurisdictional lines are not based on ecological features and, accordingly, do not necessarily encompass the entire coastal ecosystem. They do, however, encompass a vast area, especially when the exclusive economic zone and the continental shelf are taken into account, and, therefore, it may be argued that they go some way towards (unintentionally) facilitating an ecosystems approach.

In any event, given that South Africa has ratified and, therefore, is bound by the provisions of the UNCLOS, the drafters of the NEM: ICMA had very little choice when it came to determining the extent of the seaward boundaries of the coastal zone.

3. Landward boundaries

While it is relatively easy to delineate the seaward boundaries of the coastal zone, it is much more difficult to delineate the landward boundaries and a number of different approaches can and have been adopted. In some coastal nations the landward boundaries are based on ecological and physical considerations, in others on legal and management considerations and

[199] Maritime Zones Act 15 of 1994.
[200] Freedman 'Integrated Coastal Management Boundaries and South Africa's New Integrated Coastal Management Act' in E Couzens and T Honkonen (eds) *International Environmental Law-making and Diplomacy Review – 2008* (2009) at 167.
[201] United Nations Convention on the Law of the Sea 21 ILM 1261 (1982). Available at: http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm, accessed on 11 January 2016.

in others on entirely arbitrary considerations or a combination of all or some of these considerations.

Prior to the enactment of the NEM: ICMA, the landward boundary of the coastal zone in South Africa was based on a physical consideration, namely the high-water mark, which was defined in the Sea-shore Act as 'the highest line reached by the water of the sea during ordinary storms occurring during the stormiest period of the year, excluding exceptional or abnormal floods'.[202] The fact that this boundary frustrated rather than facilitated an integrated, and especially ecosystems based, approach to coastal management, is one of the reasons why the Sea-shore Act was replaced with an entirely new Act.

Although the high-water mark still forms the landward boundary of coastal public property and, therefore, continues to play an important role in determining the geographical area of the coastal zone, it no longer forms the landward boundary of the coastal zone.[203] Instead, the landward boundary of the coastal zone may now be found in the different components that make up the coastal protection zone, which subjects a vast new area to the jurisdiction of the Act.

A careful examination of the components that make up the coastal protection zone, show us that its landward boundaries are based primarily on two arbitrary considerations. The first of these may be found in section 16(1)(d) which provides that it extends '1 km inland from the high-water mark in those areas that were zoned for agricultural or undetermined use, or were not zoned, or did not form part of a lawfully established township, urban area or human settlement when the Act came into effect'. The second may be found in section 16(1)(e) which provides that it extends 100 metres inland from the high-water mark in all other areas.

Apart from these two arbitrary considerations, however, the landward boundaries of the coastal protection zone are also based on a number of other ecological and physical considerations.

[202] Section 1 of the Seashore Act.

[203] In this respect it is important to note that the high-water mark will not always form the landward boundary of coastal public property. In those cases where the State owns an admiralty reserve that is adjacent and parallel to the high-water mark, the landward boundary of coastal public property will extend further inland than the high-water mark. The same principle applies in those cases in which land has been reclaimed from the sea in terms of sections 7B and 7C and where the Minister has declared any state-owned land to be coastal public property in terms of section 8.

The ecological considerations may be found in section 16(1)(a) which provides that the coastal protection zone includes any area declared to be a sensitive coastal area in terms of the ECA; section 16(1)(b) which provides that it includes any part of the littoral active zone that is not coastal public property; and section 16(1)(c) which provides that it includes any part of a coastal protected area that is not coastal public property.

The physical considerations may be found in section 16(1) (h) which provides that the coastal protection zone includes any admiralty reserve which is not coastal public property and section 16(1) (i) which provides that it includes any land adjacent to any of the areas set out above that would be inundated by a 1:100 year flood or storm.

The landward boundaries of the coastal protection zone are also based on a combination of arbitrary, ecological and physical considerations. These may be found in section 16(1)(f) which provides that it includes any coastal wetland, lake, lagoon, river or dam that is situated wholly or partly within the one kilometre or 100 metre boundary referred to in sections 16(1)(a) and (b) and section 16(1)(fA) which provides that it includes any part of a river that is situated wholly or partially within the one kilometre or 100 metre boundary referred to in sections 16(1)(a) and (b).

Insofar as the landward boundaries of the coastal protection zone are concerned, the following points may be made:

- First, that the landward boundaries of the coastal protection zone are dominated by arbitrary considerations, namely the 1km and 100m lines. These boundaries obviously detract from implementing an integrated, and especially and ecosystems-based, approach to coastal management. In this respect, legal, managerial and practical considerations appear to have weighed quite heavily with the drafters of the NEM: ICMA.

- Second, that the drafters of the NEM: ICMA have attempted to ameliorate the consequences of adopting the 1 km and 100 m lines, by also basing the landward boundaries of the coastal protection zone on ecological and physical considerations as

well as a combination of all three considerations. In this respect the NEM: ICMA goes much further than the Sea-shore Act did and represents a positive step on the road towards adopting an integrated, and especially an ecosystems based approach to managing the coast without necessarily reaching that goal.

- Third, in order to properly facilitate the introduction of an integrated, and especially ecosystems-based, approach to managing the coast it is submitted that the boundaries of the coastal zone should be made up of different component some of which are based on ecological and physical considerations, others on legal and managerial considerations and others on arbitrary considerations. Instead, it should be defined using primarily ecological and physical considerations. A useful example of this approach can be found in the United States Coastal Act. In this Act the coast is defined as:

  'the coastal waters (including the land therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder, strongly influenced by each and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands and beaches'.

While the use of ecological and physical considerations to define the coastal zone may introduce an element of uncertainty into this field of the law, it is submitted that this will not necessarily be an insurmountable problem as the recent judgment in *The Body Corporate of Dolphin Cove v KwaDukuza Municipality* shows.[204]

4. The Body Corporate of Dolphin Cove v KwaDukuza Municipality

This case deals with the storms that occurred in March 2007 in KwaZulu-Natal, before the application of the NEM: ICMA. In 2009 the Municipality respondent reconstructed a promenade that was washed away in the storms. The dunes connected to the Dolphin Cove property development were extensively eroded by the storm. The Applicant alleged that the reconstructed promenade encroached on the Dolphin Cove property and sought for the promenade to be removed. It contended further that the Promenade was rebuilt without the relevant authorisation from the second respondent, the department of Agriculture,

[204] [2012] ZAKZDHC 13.

Environmental Affairs and Rural Development. In addition, the Applicant argued that the development of the promenade affected the stability of the dunes which in turns destabilises Dolphin Cove.

The case clearly raises issues like the biophysical nature of the coast, the protection of property rights, introducing the economic element, the social needs of society particularly the right of access to the coast and the institutional capacity of the authorities to deal with the problem. The innovative capacity of the definition of the coastal zone supported by the enabling provisions of the NEM: ICMA could have been commented on in this case, since the NEM: ICMA had come into force at the time the matter was heard, but the Court missed the opportunity to make any comments on the new legislation. The resolution of this type of issues forms the basis of the vision of the NEM: ICMA as set out in the preamble to the Act.[205]

Some of the issues could clearly have been resolved if the authorities handled the matter appropriately before court proceedings were instituted. At the outset, the development would not have been allowed to proceed if integrated coastal management principles were considered in the environmental assessment performed in respect of developing Dolphin Coast. On the other hand, the municipality would also not have been allowed to proceed to build the promenade in the manner it did.[206]

The first issue the Court considered was whether or not an encroachment occurred. The second issue was whether the Municipality was entitled to build the promenade. The extent of the property as reflected on the Title Deed was not disputed between the parties. The problem arose with the fact that the Eastern boundary of Dolphin Cove was the seashore. This seashore is determined by the high water mark which in turn affects the seaward boundary of Dolphin Cove. The high water mark was last surveyed by the authorities in 1941. It is the fact that the high water mark was determined officially 56 years prior to this storm occurring that presented as a challenge.

[205] The third paragraph in the preamble to the NEM: ICMA explains that the coastal zone is a unique part of the environment in which biophysical, economic, social and institutional consideration interconnects in a manner that requires a dedicated and integrated management approach.
[206] Section 63(1)(c).

The Municipality's professional land surveyor, confirmed when the property was subdivided, that the seaward boundary was a curvilinear line 12.19 meters from and parallel to the high water mark, but at the same time argued that the high water mark that prevailed was the one established in 1941.[207] Issues arose as to whether to accept the high water boundary determined by the authorities in 1941 or to accept a subsequent boundary determined in 1975. Roman Dutch principles of *ager limitatus* and *non limitatus* were raised. Due to the conflict in the approach of the municipality's land surveyor and the fact that the Surveyor General had accepted on three occasions the revised assessment of the high water mark, the Court concluded that the high water mark established in 1941, did not exist, the property was *ager non limitatus* and the eastern boundary of the property was 12.19 meters from the high water mark. Value can be derived from this case relating to the fact that the understanding of the Roman law concepts of *ager limitatus* and *non limitatus* was again re-affirmed.[208]

What would the Court have decided in terms of the NEM: ICMA and what options would have been available to the municipality? The NEM: ICMA, as mentioned above does not view the coastal zone as the seashore alone but compartmentalises it into the different zones including the coastal protection zone, affording the area beyond the seashore protection. Dolphin Cove factually falls within the 100 meter radius of the high-water mark, meaning that it could fall into the space of the coastal protection zone. The land on which the promenade was built could also fall within the definition of the coastal Public Property if the boundaries were extended by the Minister.[209] In the form it existed, it is not coastal public property, as it was lawfully alienated before the NEM: ICMA took effect. It is common cause that the seaward boundary of the Dolphin Cove property was 12.19 meters from the high-water mark. Under the amended NEM: ICMA, the determination of the high water mark would only have to exclude storms that occurred every 100 years; hence the courts would have been bound by the official determination of the high water mark.

Section 14(4) initially allowed private property owners to establish the high-water mark by agreement with the surveyor general. This provision has since been deleted by the amended NEM: ICMA.[210] The municipality disputed that the 1975 high-water mark should be considered as it was not the official high water mark registered. Section 14(1) of NEM:

[207] At par10.
[208] Ibid.
[209] Coastal Protection Zone as contemplated in section 17.
[210] Section 14(4) has been deleted (see *Government Gazette* Notice No. 38171, 31 October 2014).

ICMA Amendment Act specifically prevents any person from replacing 'the high-water mark curvilinear boundary with a straight line boundary in terms of section 34 of the Land Survey Act.'[211] The Act not only provides an innovative definition of the coastal zone, but provides supporting tools like section 14 to give effect to the definition of the coastal zone and the purpose of the legislation, but its interpretation is still to be tested in court. [212] Because the eastern boundary of Dolphin Cove was not defined by a straight line boundary, but by the seashore, Section 14(5) of the NEM: ICMA as amended does not apply. The Act on the other hand provides for reclamation of such land to protect its sensitive nature or to afford protection from dynamic coastal processes.[213]

If the area was established as a coastal protection zone, the Act is prescriptive about its management. By creating the area 100 meters from the high-water mark as the coastal protection zone, immediately affords the area protection. All the different authorities dealing with the area must view the piece of land in terms of the protection it acquires from the NEM: ICMA. It is clear that before the Act, NEMA was not invoked by the authorities in a manner that considered integrated coastal management. Section 63(1) (c) works in synergy with NEMA and provides that for authorisations in terms of chapter 5 of NEMA[214], the competent authority must consider the intention for which the coastal public property, the coastal protection zone and the coastal access land was established. The criterion to consider whether to allow a development like Dolphin Cove was expanded considerably by the inclusion of further criteria under section 63. The competent authority must take into account whether the development is located within the coastal public property and clashes with the aim of conserving and enhancing coastal public property for the benefit of present and future generations; is situated within the CPZ and clashes with the purpose for which the coastal protection zone was created, is likely to cause significant damage to the coastal environment, would obstruct the process of coastal management and would be in conflict with the interest of the community.[215]

This means that the Dolphin Cove development within 100 meters of the high-water mark at the time would have triggered an environmental impact assessment. It can also be questioned

[211] Section 14(1). Land Survey Act refers to the Land Survey Act 8 of 1997
[212] Section 14(4).
[213] Section 7A sets out the grounds to establish coastal public property which includes protection of sensitive coastal areas and to facilitate the achievement of any of its objectives.
[214] Chapter 5 of the NEMA
[215] Section 63 deals with environmental authorisations for coastal activities.

whether the subdivision should have been allowed as it presupposes that the land will be used in some way. Further, in terms of the NEM: ICMA, parameters of the Dolphin Cove property will not increase if the high-water mark shifts seawards.[216] The NEM: ICMA provides a further novel way of protecting the coastal zone, namely establishing the CPZ in this case, by allowing the MEC to establish coastal management lines. This means that if the coastal management lines were in place, Dolphin Cove carries the risk against coastal erosion which results naturally, and is not allowed in terms of the NEM: ICMA to take steps to prevent erosion of the coastal protection zone, if the area is established as such. If coastal management lines were effectively implemented, the conflict about where the high-water mark ends becomes a moot point, as the type of management line will determine whether an activity can take place in that space notwithstanding where the high water mark ends. On the other hand Section 8 allows the Minister to 'declare coastal public property to protect sensitive coastal ecosystems '.[217]

On the other hand, a development along the Piesang River Estuary in Plettenberg is being pursued notwithstanding the provisions of the NEM: ICMA. The Piesang River Estuary was earmarked for development of a harbour, prior to the NEM: ICMA and the need for the harbour no longer exist. In 1998, there was a large fleet of fishing boats that anchored regularly just off the beach and was affecting tourism. The town council wished to move these boats into a harbour. The boats no longer dock in this area but the developer is persisting with his application for authorisation. [218]

The problem is that the development is not permitted in terms of the NEM: ICMA, unless it is in the interest of the society, or it cannot be developed elsewhere. It is within the coastal protection zone, particularly within an important estuary. Even if development was allowed, the developer will not be able to sell the land because no private development can be pursued in the area in terms of NEM: ICMA.[219] At the time the estuary was proposed as a preferred area for development of the harbour, the NEM: ICMA was not in place, but would now be an obvious violation of the legislation. The above examples are just two scenarios of the

[216] Section 14(5).
[217] Section 8.
[218] Letter from the Western Cape Government, Environmental Affairs and Development Planning (Land Management, Region3), to the Developer, setting out the grounds for rejection of the final scoping report for the development. This letter was attached to a report by a local community newspaper providing an update on the application. Available at: http://thegremlin.co.za/plettenberg-bay-news/wordpress/, accessed on 7 January 2016.
[219] Section 7(C).

difficulties that can arise with the definition of the high-water mark. Much of this challenge is alleviated by the creation of the coastal protection zone in the Act.[220]

Interestingly in the Piesang River Estuary case, the developer has rallied support of the local rural community for the development on the promise of jobs. The argument is obviously the opportunity the development contributes to poverty alleviation and economic development in a town where jobs are scarce.

The above examples places the potential of the legislation in a practical context, where on the one hand, if effectively implemented, the parameters of activities within the coastal zone can be defined, whilst on the other hand, it also reflects the difficulties of implementation when legal definitions are challenged particularly in relation to the landward boundaries of the coastal zone. Secondly the provisions extending the boundaries can be implemented to embrace the area affected by the storms as Special Management areas.

5. Conclusion

Having critically analysed the manner in which each section of the coastal zone is defined in NEM: ICMA, it can be concluded that the definition in theory does indeed facilitate an integrated and especially ecosystem based approach to managing the South African coast.

Ecosystem protection was clearly the motivation when the coastal protection zone was added as a buffer zone to coastal public property. The coastal public property being between the sea-shore which is largely determined by high and low tides, and the coastal waters which is also influenced by the tidal waters, meant that the coastal public property would be constantly changing .Because the area would be constantly changing, stakeholders in the area would interpret the area to suit their own needs, often reducing the parameters of the area when ecosystem protection is weighed against human use of the area.

The legal definition of the coastal zone must therefore be seen as a necessary starting point to an integrated and eco-system based management of the area, facilitating a common approach to the use and management of the coastal zone. It is only a starting point to

[220] Section 16.

identifying the spatial levels of the ecosystem, as the spatial levels can at any time be expanded by the innovative introduction of management lines, which gives the ecosystem priority, if any use or natural process conflicts with the preservation of the ecosystem. Throughout the Act, the objective of protecting sensitive coastal ecosystems and securing the natural functioning of dynamic coastal processes is emphasised.

The definition can also be seen to meet the more modern challenges, like climate change. Whilst in theory the legislation provides a common set of tools and procedures and a common understanding of the composition of the coastal zone, the practical implementation remains a challenge. The Act came into effect on the 1 December 2009, but the areas such as the Admiralty Reserves have not been completely identified and demarcated. To establish Special Management Areas, for example requires special scientific knowledge and human capacity.

An integrated ecosystem based approach, being a goal motivated approach requires not only the commitment of the leadership but the public buy in to the process. It is clear from the manner in which the coastal zone was defined it took into account human interaction with the coast. For an impoverished group of people, their survival needs will by far outweigh any inclination to protect the environment unless the value of such protection is fully understood by such a group. Ultimately, the legislation has in theory accomplished its goal of facilitating an integrated and ecosystem based approach to management through the definition of the coastal zone. Its success however will be determined by how the flexible definition is adjusted and extended to meet its objects. The gap between theory and implementation still has to be closed through scientific knowledge, human resources and political and society's buy- in to such implementation.

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