

SOUTH AFRICA COUNTRY REPORT 24 JUNE 2011

POLICY AND GOVERNANCE ASSESSMENT FOR MARINE AND COASTAL RESOURCES

Contents

EXECUTIVE SUMMARY	2
OBJECTIVES AND TERMS OF REFERENCE	2
PART A: COUNTRY PROFILE	3
1. The marine and coastal environment: physio-geographic setting.....	3
2. South Africa’s legal system	4
2.1 History.....	4
2.2 The Common Law	5
2.3 The Constitutional framework	5
2.4 National legislative process	5
2.5 International Conventions.....	7
2.6 The regional dimension.....	7
PART B: NATIONAL INSTITUTIONAL FRAMEWORK.....	10
3. Introduction.....	10
4. Regulatory Authorities: national level of government.....	12
4.1 The Department of Water Affairs & Environment.....	12
4.2 The Department International Relations & Cooperation (DIRCO).....	13
4.3 The Department of Transport (the DOT).....	13
4.4 The South African Maritime Safety Authority (SAMSA).....	13
4.5 The Department of Health	14
4.6 The Department of Minerals.....	14
4.7 The Department of Energy.....	14
PART 3: SECTORS.....	15
5. Sector 1: Maritime Zones.....	15
6. Sector 2: Fisheries and Mariculture	18
7. Sector 3: Environmental Management, protected areas and wildlife conservation.	24
8. Sector 4: Coastal Zone Management	25
9. Sector 5: Tourism.....	28
10. Sector 6: Oil and Gas	29
11. Sector 7: Ports and coastal transport.....	29
CONCLUSIONS	31
ANNEXURE 1.....	32
ANNEXURE 2.....	35
References/Selected Bibliography	36

EXECUTIVE SUMMARY

The South African policy and governance report for marine and coastal resources is set against the backdrop of the sweeping constitutional and legislative changes that were made as a result of the country's transformation to democracy in 1994. This included the adoption of a Constitution which includes Bill of Rights and the re-admission of the country into the international and regional fold of nations. The report outlines the broad sweep of policy and legislative developments that has occurred since that time. These include broad-ranging institutional changes ranging from the adoption a quasi-federal system of government, nine instead of four provinces, four of which are coastal, to the recognition of local authorities as separate and independent spheres of government. All of these changes have in one way or another impacted on marine and coastal management including the fisheries sector.

OBJECTIVES AND TERMS OF REFERENCE

The objective of this report is to assess and make recommendations on the sustainable management of South Africa's marine and coastal resources in the context of other countries in the West Indian Ocean (WIO) region. More specifically the report seeks to outline and assess the application of an Ecosystem Based Approach (EBA) and Living Marine Ecosystem (LME) approach for the sustainable management of such resources with a view to benefitting the people and alleviating poverty in the region.

More specifically the terms of reference are to:

- Undertake a National Level Policy and Governance Assessment for marine and coastal resources, covering a period of at least the last 20 years. In the case of South Africa it is preferable to reduce this to 17 years as it was in 1994 that South Africa transformed to democracy in adopting its first democratic (interim) constitution and ending centuries of racially based rule.
- Compile and analyze all governance efforts (that is legal and policy changes and actions – including institutional reforms) relating to marine and coastal resources within the territorial waters and coastal zone; including identifying gaps and need for harmonization;
- Collate and review fisheries and all other relevant policy making processes and related laws, and advise on areas where harmonization is possible to enable the implementation of an ecosystem based approach to management;
- Review and document the funding provided for the management of marine and coastal resources by government, externally-funded projects and the private sector;
- Assess the level of participation by stakeholders – including local communities and the private sector in the management of marine and coastal resources.

PART A: COUNTRY PROFILE

1. The marine and coastal environment: physio-geographic setting

South Africa is situated at the interface of two of the world's great oceans with ready access to a third, the vast Southern Ocean, and is on one of the oldest navigation routes of the world. The country's EEZ spans 1 071 883 km². The length of its coastline length is approximately 3650km, stretching in the north-west from the Orange River where it borders with Namibia to the Mozambique border in the north-east. The coastline is unusually straight and subject to strong wave action. Few indentations or bays exist and it is exposed to the South Atlantic and Southern oceans' swells and waves which originate up to 10 000 km to the southwest and often reach heights in excess of five meters making the coastline inhospitable for navigation and for the landing of vessels. (McLean B and Glazewski JI "*Marine Systems* " Chapter 14 in Strydom & King Fuggle & Rabie's *Environmental Management in South Africa* (2nd ed 2009) 455)

A unique feature of the marine environment is sharply contrasting currents on the east and west coasts. The Benguela Current, a productive flow of cool water flowing towards the equator occurs on the west coast. (Lombard, A.T., Strauss, T., Harris, J., Sink, K., Attwood, C. & Hutchings, L. 2004: *South African National Spatial Biodiversity Assessment 2004: Technical Report. Volume 4: Marine Component*. South African National Biodiversity Institute, Pretoria). The Benguela current was the driver behind the BCLME initiative which amongst other things resulted in the establishment of the Benguela Current Commission, a governance agreement between the adjoining three coastal states of Angola, Namibia and South Africa, elaborated on in 2.6 below. The South African coastal area and extent of its physical continental shelf are depicted in Figure 1 below.



Figure 1: from Lombard et al 2004)

More pertinent to this report is the warm (20-25 °C), nutrient poor, Agulhas Current, which originates in the Indian Ocean and which is formed partly from the Mozambique Current, flowing southwards between Madagascar and Mozambique. It hugs the edge of the continental shelf, occurring close inshore off Zululand where the shelf is narrow, further offshore near Durban, closer again off the Transkei coast and then further and further offshore as the shelf widens to form the Agulhas Bank south of Port Elizabeth. It is a swift, deep current, flowing at 5-10 km per hour at its core and reaching a depth of more than 1 000 m.

While the Agulhas Current flows rapidly south- and westward at the edge of the shelf, water over the main part of the shelf further inshore is subjected to pulsing counter-currents flowing in the opposite direction. This is utilized by shipping, with northward traffic lanes inshore of the south-bound ships. It is also utilized by fish and plankton in their migrations. Most line-fish caught in the Western Cape Province tend to spawn off the Transkei coast. Their eggs and larval stages float in the plankton and get caught up in the Agulhas Current. Those that find themselves in gyres and eddies to the right of the Current end up on the Agulhas Bank where estuaries, domes of nutrient-rich water or coastal upwelling provide food for their development and growth and the completion of their life cycles. Adults presumably then stay inshore, taking advantage of the counter-currents to migrate back east and north to their spawning grounds off Transkei. The most well-known example of fish migrations taking advantage of the counter-currents is the annual 'sardine run' off Kwa-Zulu Natal. The run is a migration of the Cape pilchard (or sardine) which commonly occur on the Agulhas Bank as adult fish. Some of these fish move eastwards to reach the Natal south coast in June or July each year. It is presumed that they stay inshore to feed on the plankton blooms caused by dynamic upwelling on the inner side of the Agulhas Current. This water tends to flow northwards as a counter-current, and carries the sardines with it.

2. South Africa's legal system

2.1 History

From a historical perspective South Africa is a mixed legal system reflecting predominantly the Roman Dutch civil law and to a lesser extent English common law traditions. The civil law component derives from Dutch occupation of the Cape of Good Hope, from around 1652, which resulted in the introduction of Roman-Dutch law to the Cape; and the common law component from the subsequent occupation and settlement by British settlers. This colonization was driven by the discovery of diamonds and gold in the interior of the country during the nineteenth century. A watershed occurred in 1994 when South Africa held its first democratic election thereby overthrowing over 300 years of racially based authoritarian laws. In so-doing South Africa moved from a sovereignty-based system of governance where parliament reigned supreme to a constitutional democracy underpinned by a Bill of Rights contained in Chapter 2 of the Constitution.

This system, supplemented by a growing body of statute law, is to a large extent still intact today, provided that where there is conflict with the Constitution, the offending law must give way in terms of section 2 of the Constitution.

2.2 The Common Law

South African Roman Dutch common law underpins policy and legislation dealing with natural resources including that found in the marine and coastal environments. A useful starting point is the classification of ‘things’ in Roman Dutch common law into the following three categories:

- *Res nullius*: Things owned by nobody but capable of private ownership, for example, wild animals roaming in the wild and fish in the sea;
- *Res omnium communes*: Things owned by nobody but enjoyed by all, for example, the sea and sea-shore in Roman Law;
- *Res publicae*: Things owned by the authority but doing so on behalf of the people, for example, the sea and sea-shore in Roman Dutch Law

2.3 The Constitutional framework

The ‘new’ democratic South Africa is a quasi-federal system of governance in that legislative powers are predominantly located at national level but certain powers are shared with, or are exclusive to, provincial and municipal (local) authorities. Marine matters, particularly marine fisheries are exclusively of national government competence while certain aspects of coastal zone law are shared with the four coastal provincial authorities, for example coastal planning depending on how one defines the coastal area. These institutional matters are elaborated on in Part B below.

The Bill of Rights, chapter of the Constitution, includes an environmental right in the following terms (sect 24):

Everyone has the right—

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

2.4 National legislative process

The development of national legislation is generally subject to a wide public participation process particularly since the adoption of the 1994 Constitution which emphasises transparency and openness. New national legislation is usually developed in draft form by the relevant government department, for example new environmental legislation would be initiated by the Department of Environment. This would usually be preceded by or done in tandem with an extensive public participation process in the form of the

publication of policy documents and invitation to civil society to make representations to the relevant portfolio committee when the bill is presented in parliament.

Two relevant policy documents here are:

Our Coast Our Future: Coastal Policy Green Paper: Towards Sustainable Coastal Development in South Africa Department of Environmental Affairs and Tourism September 1998.

White Paper for Sustainable Coastal Development in South Africa Department of Environmental Affairs and Tourism (Coastal Management Policy Programme) April 2000.

This coastal policy process culminated in the enactment of the National Environmental Management: Integrated Coastal Management Act 24 of 2008 (the 'ICM' Act) which repealed and replaced the out-dated Sea-Shore Act 21 of 1935 and is elaborated on in below.

In the marine fisheries sector the transformation to a new democratic South Africa was accompanied by an extensive public participation process during the 1990s with the intention of formulating a new national fishing policy. The process culminated in the publication of *A Marine Fisheries Policy for South Africa: White Paper, Chief Directorate of Sea Fisheries of the Department of Environmental Affairs and Tourism May 1997*. This underpins not only current fisheries policy but also the Marine Living Resources Act, 18 of 1998 ('MLRA') outlined below.

The White Paper referred indirectly to an ecosystem-based approach to the use of marine resources in that it referred to the need to optimise the long-term social and economic benefits to the nation. However its key thrust was to present a new fishing policy aimed at fundamental political transformation of the fisheries sector. In this context the key values underlying the White Paper were: the management and development of fisheries in compliance with the Constitution, and the promotion of fair and equitable access to marine resources. The White Paper expressly acknowledged that access to marine resources in South Africa had historically not been fair and equitable, noting that in the commercial sector in particular:

... the present concentration of access may be elaborated by introducing the aspect of colour or ethnic group associated with the respective quota holders. If so analysed, the picture displays an overwhelming quota-holder dominance by the formerly advantaged sector of the population . . .

(Par 4.3 at 17)

While the White Paper emphasised the need to balance transformation goals with those of sustainability in access rights decisions, not all of its ideas found their way into the MLRA which retains the traditional system of permits and quotas and does not embrace a system of real rights as seen below.

The MLRA is outlined in Part 3 (Sector 2) below

2.5 International Conventions

Depending on the subject of proposed new laws, the national legislative process is also driven to some extent by international conventions which South Africa is a party to. With the transformation to democracy South Africa was re-admitted into the international fold of nations and adopted a number of international conventions, including the 1982 UN Convention on the Law of the Sea (UNCLOS) well a many others relevant to this report.

The South African Constitution obliges parliament to give these treaty obligations domestic legal effect by enacting domestic legislation to do so. By and large South Africa has done so. For example it is party to the Convention on Biodiversity and has enacted the NEM: Biodiversity Act 10 of 2004.

Annexure 1 of this document sets out a table of status of ratification of international conventions related to marine matters generally and fisheries in particular. These conventions generally do not adopt an ecosystem based approach to fisheries management the only exception being the 1972 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) which is not relevant to the area in question in this report.

2.6 The regional dimension

2.6.1 UNEP's Regional Seas Programme

As regards UNEP's regional seas programme, South Africa, being at the interface of both the Atlantic and Indian Oceans, is party to both the Convention for the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, 1981 together with its protocol on co-operation in emergencies (the Abidjan Convention) and, pertinent to this report, the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (the Nairobi Convention). The later has been supplemented by the Protocol concerning Protected Areas and Wild Fauna and Flora (SPAW Protocol) in the Eastern African Region and the Protocol concerning Co-operation in Combating Marine Pollution in Cases of Emergency (Emergency Protocol) in the Eastern African Region and more recently (2010), a Protocol on Combating Marine Pollution from Land Based Sources . South Africa is also actively involved in the respective action plans for the West African region as well as one for the East African region.

2.6.2 Large Marine Ecosystems (LMEs)

The global Large Marine Ecosystems (LMEs) programme has been subject to intensive marine scientific research in the recent past and initiatives have been launched to link these to regional conventions. Thus on the west coast of Africa is the Guinea Current

LME (GCLME) and the Benguela Current LME (BCLME), while on the east side there is the Agulhas and Somali Current LME (ASCLME). The latter half of the 1990s saw the initiation of the Benguela Current Large Marine Ecosystem Programme. This was a partnership between the governments of South Africa, Namibia and Angola and was initiated to manage and utilize the resources of the BCLME in an integrated and sustainable manner. This joint initiative to improve governance of the rich resources of the Benguela current culminated in 2006 with the establishment of the Benguela Current Commission (BCC). This is an inter-agency coordination mechanism for sustainable management of the resource and has led to strengthening regional cooperation in governing the resources of the Benguela current system.

The implementation phase of the BCLME Programme began in 2002 and has a number of key objectives:

- (i) sustainable management and utilization of resources;
- (ii) facilitation of optimal harvesting of living resources;
- (iii) assessment of seabed mining and drilling impacts and policy harmonization;
- (iv) responsible development of mariculture;
- (v) protection of vulnerable species and habitats;
- (vi) assessment of non-harvested species and their role in the ecosystem;
- (vii) assessment of environmental variability;
- (viii) ecosystem impacts and improvement of predictability;
- (ix) reducing uncertainty and improving predictability;
- (x) capacity strengthening and training;
- (xi) management of consequences of harmful algal blooms;
- (xii) maintenance of ecosystem health and management of pollution;
- (xiii) improvement of water quality;
- (xiv) prevention and management of oil spills; xv) reduction of marine litter;
- (xvi) retardation/reversal of habitat destruction/alteration; and xvii) conservation of biodiversity.

A Strategic Action Plan (SAP), signed by ministers representing the fisheries, environment and mines and energy sectors of Angola, Namibia and South Africa in January 2000, lays out guidelines and a policy framework for the integrated and sustainable management of the BCLME. The BCLME Programme has supported a number of projects towards improved knowledge of the BCLME and recommended strategies for the trans-boundary management of fishing, mining, oil exploration, coastal development, biodiversity and pollution. Programme activities revealed the absence of inter-agency coordination mechanism for sustainable management of the resource and led to the establishment of the Benguela Current Commission (BCC) in 2006 to strengthen regional cooperation and to address the gaps in current knowledge and make recommendations to the three countries on research and management issues relating to the management of the BCLME.

A process similar to the BCLME is now underway that incorporates the Agulhas Current Large Marine Ecosystem (ACLME) together with the Somali Current Large Marine Ecosystem (SCLME) which extends from the Comoros Islands and the northern tip of Madagascar up to the Horn of Africa and is the subject of this report (UNDP, 2006: Agulhas & Somali Current Large Marine Ecosystems Project. GEF Project document).

2.6.3 The Straddling Stocks Convention

The UNCLOS encourages the development of regional measures for the optimum utilisation and management of straddling stocks as well as highly migratory species like tuna (Art 64). Straddling stocks are those, which occur in the EEZ's of two or more adjacent coastal states or in the EEZs of opposite states; while highly migratory species migrate between the High Seas and EEZs. South Africa has acceded to the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling Stocks Convention). This establishes principles for the sustainability and optimal utilisation of these stocks and obliges parties to adopt management measures reflecting these principles based on the best scientific information available. To facilitate the implementation of the principles, the Agreement provides a framework for co-operation between coastal state parties in which the stocks are found, and state parties whose fleets harvest the stocks in the adjacent high seas.

2.6.4 Other Regional Fisheries Management organisations

South Africa is party to a number of Regional Fisheries Management Organizations (RFMOs), relevant here being the Western Indian Ocean Tuna Organization (WIOTO), South West Indian Ocean Fisheries Commission (SWIOFC) and the South West Indian Ocean Fisheries Project (SWIOFP).

Indirectly relevant is the Indian Ocean Commission, a regional organization comprising of five island states: Comoros, Madagascar, Mauritius and Seychelles and France by virtue of its sovereignty over Reunion. It was established in 1984 under the General Victoria Agreement and its objectives include diplomatic cooperation, economic and commercial cooperation, cooperation in marine fisheries, agriculture, scientific, technical, cultural fields as well as the conservation of resources and ecosystems.

A big focus of the five IOC countries is marine fisheries and central here is a number of Fisheries Partnership Agreements (FPAs). These must be seen in the context of the more general and relatively recent ACP-EU Economic Partnership Agreements initiative. The previous Cotonou Partnership Agreement between the EU and African, Caribbean, Pacific (ACP) States has been replaced by a comprehensive partnership agreement between the EU and ACP regional groupings, including the WIO region. There are currently 79 members of the African, Caribbean and Pacific (ACP) group of states including the eight countries which are the focus of this report (Comoros, Seychelles, Madagascar, Mauritius, Kenya, Tanzania, Mozambique and South Africa) (www.acpsec.org/en/acp_states.htm). Somalia is also a member.

PART B: NATIONAL INSTITUTIONAL FRAMEWORK

3. Introduction

As indicated in Part A South Africa is a quasi-federal state in that legislative and executive power by and large resides at national level of government. However there are also nine provinces, four of which are coastal, as well as local authorities all of which enjoy certain powers and function related to the coastal areas.

In this regard the Constitution lays out a set of complicated rules laying down the respective competency or jurisdiction of national, provincial and local spheres of government respectively to legislate and administer planning matters in Schedules 4 and 5. These two schedules are headed “Functional Areas of *Concurrent* National and Provincial Legislative Competence” and “Functional Areas of *Exclusive* Provincial Legislative Competence”, respectively. Both schedules are divided into Part A and B to deal with local authority competences. Those items particularly relevant to, or related to, marine and coastal issues in these two schedules are set out in Boxes 1 & 2 below.

BOX 1

Schedule 4

Functional Areas of Concurrent National and Provincial Legislative Competence

Part A

‘Environment’

‘Administration of Indigenous Forests’

‘Cultural Matters’

‘Health Matters’

‘Nature Conservation, excluding national parks, national botanical gardens and marine resources’

‘Pollution control’

‘Regional planning and development’

‘Urban and rural development’ ‘municipal planning’

‘Tourism’

‘Trade’

Part B

‘The following local government matters to the extent set out in section 155(6)(a) and (7)’:

‘Air Pollution’

‘Municipal health services’

‘Municipal planning’

‘Municipal public works...’

‘Pontoons, ferries, jetties, piers and harbours’

‘Stormwater management systems in built-up areas’

‘Trading regulations’

‘Water and sanitation services limited to potable water supply systems and domestic wastewater and sewage disposal systems’.

BOX 2

Schedule 5

Functional Areas of Exclusive Provincial Legislative Competence

Part A

‘Provincial cultural matters’

‘Provincial roads and traffic’

Part B

The following local government matters to the extent set out for provinces in section 155(6)(a) and (7):

‘Beaches and amusement facilities’

‘Billboards and the display of advertisements in public places’

‘Cleansing’

‘Control of public nuisances’

‘Noise pollution’

‘Refuse removal, refuse dumps and solid waste disposal

It will be noted that Schedule 4 amongst other things includes the items ‘Environment’ and ‘Nature Conservation, excluding national parks, national botanical gardens and marine resources’ under Part A resulting in this being both of national and provincial competence while Schedule 5 lists ‘Beaches and amusement facilities’ making this an area of exclusive provincial legislative competence.

This Part B accordingly outlines the respective powers and functions of national, provincial and local levels of government in so far as these pertain to marine and coastal issues focusing particularly on marine resources.

4 Regulatory Authorities: national level of government

The main regulatory authorities concerned with the marine and coastal environment are located at national level of government. These include the following, listed in order of priority in the context of the subject matter of this report:

4.1 The Department of Water Affairs & Environment

Prior to 2009 a key national government department regarding marine and coastal issues was the Department of Environment Affairs and Tourism (‘DEAT’) which administered not only a suite of environmental legislation described in Part C as well as the Marine Living Resources Act, 18 of 1998 (‘MLRA’) which is central to this report and which is also outlined in Part C. With the assumption of the new President of South Africa, Mr Jacob Zuma, in 2009 there was a general overhaul of government Ministries. This resulted in the DEAT being split into two Ministries with the Department of Environment being coupled to the former Department of Water Affairs & Forestry (‘DWAF’). The latter department in turn was also reconstituted to become a newly named Department of Water and Environment (‘DWE’). Significant to this report is the fact that the ‘fisheries’ section of the former DEAT (and the ‘forestry’ section of the former DWAF) were moved to the newly named Department of Agriculture, Forestry & Fisheries (‘DAFF’).

The newly named DWE (formerly the ‘DWAF’) administers the Integrated Coastal Management Act, 24 of 2008 (‘ICM Act’), the National Environmental Management Act 108 of 1998 (‘NEMA’) and a few provisions of the now largely defunct Environment Conservation Act, 73 of 1998 which have not been repealed as well as the National Water Act 36 of 1998. Its Water Quality Division is responsible for water quality generally and thus for pollution of the marine environment by pollution from land-based sources, both point sources (for example, effluent pipelines out to sea) and non-point sources (for

example, seepage). Its Marine Pollution Division is responsible for various aspects of marine pollution, including clean-up of spills once they hit the sea or sea-shore. This office also issues permits to dump at sea under the Dumping at Sea Control Act.

In summary the new 'DWE' now has a branch known as Oceans and Coasts with three Chief Directorates under it: Integrated Coastal and Ocean Management; Coastal and Ocean Research; and Antarctica and Islands.

In the result the new Minister of Agriculture, Forestry & Fisheries now administers the MLRA while the Minister of Water and Environment administers the ICM Act. The separation of the marine fisheries sector from the environment department to the agricultural ministry does not promote an ecosystem based approach to the management of marine resources in the writer's view.

Be that as it may the Minister of the DAFF has powers to pass regulations concerning a wide variety of matters under the MLRA (S 77(1)) including the power to assign the administration of any provisions of the Act to the provinces. He or she may also delegate his/her powers (other than the power to promulgate regulations) to officers within the Department or to authorities in local government (sects 78 and 79).

The MLRA provides for the establishment of a Consultative Advisory Forum for Marine Living Resources (the 'CAF') (sect 5) to advise the Minister on living marine resource management, including the total allowable catch (S 6(a)(i) and(ii)). The CAF members are appointed by the Minister, and is to be "broadly representative and multi-disciplinary" S 7(1) & (2). The Act also established a Fisheries Transformation Council, (sect 29) with the objective of facilitating the achievement of fair and equitable access to fishing rights (sect 30). But, it was abolished in September 2000. (Notice No. 971 in *Government Gazette* No. 21587 dated 29 September 2000). However it is envisaged that this will be reconstituted under the DAFF

4.2 The Department International Relations & Cooperation (DIRCO)

This department is involved in the negotiation and adoption of international and regional conventions generally.

4.3 The Department of Transport (the DOT)

The DOT is responsible for maritime navigation, including the maintenance of standards by vessels. It has traditionally administered the Marine Traffic Act, the Merchant Shipping Act, the Marine Pollution (Control and Liability) Act and the Marine Pollution (Prevention of Pollution from Ships) Act outlined below. However in 1998 many of the marine pollution functions were transferred to a statutory authority, the South African Maritime Safety Authority (SAMSA), dealt with below.

4.4 The South African Maritime Safety Authority (SAMSA)

The South African Maritime Safety Authority (SAMSA) was established during 1998 in terms of the South African Maritime Safety Authority Act 5 of 1998. The mandate of SAMSA is to ensure the safety of life and property at sea, to prevent and combat pollution of the marine environment by ships, and to promote South Africa's maritime interests.

The duties of SAMSA, which is also touched on under Port and Coastal transport port (Part C Sector 7, below) are set out in the Act, and include “. . . to ensure safety of life and property at sea; to prevent and combat pollution of the marine environment by ships; and to promote the Republic's maritime interests”. SAMSA is accordingly responsible for the implementation of standards which vessels, including oil tankers, have to comply with, and for the enforcement of these standards as well as various other aspects of navigation. A supplementary Act, the South African Maritime Safety Authority Levies Act 6 of 1998, provides for the imposition and determination of levies by the shipping community.

4.5 The Department of Health

The Department of Health administers the Health Act 63 of 1977, and the International Health Regulations Act 28 of 1974.

4.6 The Department of Minerals

The Department of Minerals grants authorisation for prospecting and mining offshore and administers the carrying out of Environmental Management Plans. These authorisations could include conditions relating to pollution of marine and coastal waters.

4.7 The Department of Energy

With the reshuffling and creation of new Ministries in 2009 referred to above, a new Ministry of Energy was established. It took over the Department Energy which was previously within the composite Ministry of Minerals and Energy but which has now been renamed simply the Ministry of Minerals. The Department of Energy is largely involved with energy policy matters and the Department of Minerals retains the power to issue (off-shore) prospecting and mining authorizations as described in the previous paragraph under the Minerals and Petroleum Development Act 28 of 2002 outlined in Part C below.

Regulatory Authorities: provincial level of government

Apart from national statutes certain (coastal) provincial legislation is relevant. These relate main natural resource exploitation and conservation, namely the provincial nature conservation ordinances and those related to land-use planning namely the pre-constitutional provincial planning ordinances or post constitutional land- use planning laws as the case may be. In the main national legislation is dealt with in this report being most pertinent to fisheries.

Historically the coastal provinces administered certain legislation assigned to them under the Sea-shore Act 21 of 1935 but this legislation has been repealed and replaced by the ICM Act discussed below.

Regulatory Authorities: local level of government

Coastal local authorities play an important role in the administration and monitoring of marine pollution rules and regulations of their respective coastlines.

PART 3: SECTORS

5. Sector 1: Maritime Zones

5.1 Introduction

The physical continental shelf of South Africa is generally narrow off the east coast, somewhat wider off the west coast, and considerably wider off the south coast, where it forms the Agulhas Bank. It does not extend beyond the legal 200 nautical mile continental shelf except to a small extent south-west of the Western Cape. The Maritime Zones Act refers to the definition in article 76 of the UNCLOS in claiming the continental shelf and has determined the outer limits of the South African continental shelf in a series of surveyed co-ordinates set out in a schedule to the Act.

5.2 Maritime Zones Act 15 of 1994

The Maritime Zones Act 15 of 1994 gives effect in South African law to the various maritime zones provided for in the 1982 UNCLOS which South Africa acceded to in December 1997. The UNCLOS codifies not only the nature and extent of the territorial sea, but also provides for a number of other zones in which coastal states can enjoy various types of jurisdiction.

The Act commences by defining the baseline from which the various zones are measured (sect 2), and provides for the following six zones, each of which has a different legal regime: internal waters (sect 2), territorial waters; (sect 3) a contiguous zone; (sect 4) a maritime cultural zone; (sect 5) the exclusive economic zone; (sect 6) and the continental shelf. (sect 7).

The Act specifically also applies to offshore installations, as it stipulates that all the laws of the Republic, including the common law, apply to such installations (sect 9). An “installation” is defined as any of the following situated within the internal waters, territorial waters or the exclusive economic zone or, on or above the continental shelf: any installation, including a pipeline, which is used for the transfer of any substance to or from a ship, research, exploration or production platform off the coast of the Republic; any exploration or production platform or vessel used in prospecting for, or the mining of any substance, as well as the area above and below exploration and production platforms;

any telecommunications line as defined in the Post Office Act 44 of 1958; any vessel or appliance used for the exploration or exploitation of the seabed; and any area situated within a distance of 500 metres measured from any point on the exterior side of an installation, exploration or production platform (sec 1 Definitions of ‘installation’).

The baseline and these various zones are now described in turn, both from the international law point of view and in the context of the Maritime Zones Act 15 of 1994.

The baseline

All the maritime zones are measured with reference to the “normal baseline”, which the UNCLOS defines to be generally “. . . the low-water line along the coast as marked on large-scale charts officially recognised by the coastal state” (art 5). There are some departures from this general rule, for example, in the case of bays and harbours where the UNCLOS allows straight-line baselines to be used (art 7). It is not inconceivable that global warming and resultant sea level rise will result in significant changes for the baseline in future. The Act defines the baseline as including both the “low-water line” and straight baselines (sect2).

Internal waters

All waters landward of baselines are internal waters and include harbours, estuaries and coastal lagoons. South Africa enjoys full sovereignty over these in international law, subject only to the rights of foreign vessels in distress and certain innocent passage rights (Arts 5 and 8). The Act endorses this by providing that “any law in force in the Republic, including the common law, shall also apply in its internal waters and the airspace above its internal waters” (sect 3(2)). These provisions must, however, respect the rights of foreign vessels in distress in this zone and such innocent passage as exist in the zone (sect 3(1) and 3(3)).

Territorial sea

The territorial boundary of coastal states extends up to the extent of their territorial seas in international law. This zone may extend up to 12 nautical miles from baseline, according to international law. In this zone coastal states exercise complete sovereignty subject only to the right of “innocent passage” of foreign vessels in these waters (art 17). What exactly constitutes “innocent passage” is a moot point, as illustrated in the controversial shipments of plutonium around the South African coastline (Art 19).

The Act claims a 12 nautical mile territorial sea from baselines in conformity with these international law rules (sect 4(1)). It also confirms that any law applicable in the Republic, including the common law, applies in this zone, subject only to the right of innocent passage (sect 4(2)(3)).

Contiguous zone

The UNCLOS permits coastal states to claim a zone, seaward of and contiguous to, its territorial sea, in which it can enforce its customs, fiscal, immigration and sanitary laws (Art 33 read with art 303). The UNCLOS also lays down a duty for states to protect objects of an archaeological and historical nature found at sea in this zone, and presumes that their removal from the sea-bed is an infringement of these laws. The UNCLOS also allows coastal states to claim a contiguous zone, in which it can exercise control over infringement of its customs, fiscal, immigration and statutory laws within its territorial sea (Art 33). This zone can extend up to 24 nautical miles from baseline and South Africa has claimed a contiguous zone under the Act (Sect 5).

Maritime cultural zone

Related to the contiguous zone is the fact that the UNCLOS acknowledges that states have a duty to protect objects of an archaeological nature found at sea (Art 303). It also provides that coastal states may control traffic in such objects by presuming that their removal from the sea-bed in the contiguous zone is a contravention of the domestic laws mentioned in the section allowing a contiguous zone.

The Act accordingly claims a maritime cultural zone extending beyond the territorial waters up to a distance of 24 nautical miles from baseline. In this zone, South Africa has the same rights over objects of an historical and cultural nature as it has in its territorial waters.

Exclusive economic zone

One of the most significant outcomes of the UNCLOS was the acknowledgement by the international community that coastal states enjoy sovereignty over natural resources in the exclusive economic zone (the EEZ), which can extend up to 200 nautical miles from baseline. Coastal states have sovereign rights over both living, and non-living, natural marine resources in this zone. In addition, coastal states have the right to exercise jurisdiction over marine scientific research and environmental protection in this area (art 56). All other states have freedom of navigation and over-flight in the EEZ, as well as freedom to lay submarine cables and pipelines.

The Act claims a 200 nautical mile EEZ over which South Africa exercises sovereignty over natural resources. The declaration of this zone confirms South Africa's access to the lucrative fish and mineral resources off its coastline, including the resources off the Prince Edward Islands.

The continental shelf

The origins of the continental shelf doctrine lie in the 1945 Truman Proclamation, which stated that the United States “. . . regards the natural resources of the sub soil and sea bed

of the continental shelf beneath the high seas . . . as appertaining to the United States”. The doctrine developed in international law and is specifically provided for in part VI of the LOSC, which stipulates that coastal states have sovereign rights over the continental shelf for exploring and exploiting its natural resources (Art 77). The shelf can extend at least 200 nautical miles from baseline and beyond this line where the physical continental shelf complies, with a rather complicated geological definition of the shelf set out in the UNCLOS (Art 76).

High seas

The sea area beyond the EEZ described above is known as the high seas in which all states enjoy the traditional high seas freedoms. These include freedom of navigation, over-flight, freedom to lay submarine cables and pipelines, freedom of scientific research, freedom of fishing and others (art 87).

Delimitation questions

In claiming and demarcating these respective maritime zones, a coastal state has to respect similar rights which an adjacent or opposite state may have. If they intersect, the countries have to delimit their respective boundaries where there is an “adjacent” or “opposite” state. The normal point of departure in delimiting boundaries is the line equidistant from the coastline of the respective coastal states. The UNCLOS provides that a continental shelf or EEZ boundary between opposite or adjacent states shall be effected by agreement based on equity. The main principles of international delimitation law are laid down in a series of decisions by international courts and tribunals.

In mainland South Africa’s case there are no “opposite” states, but a maritime boundary has to be delimited between it and its coastal neighbours, namely Namibia and Mozambique. In the case of Namibia, a line has not been drawn and there is some tension in this regard, as illegal fishing vessels have relied on the lack of a boundary to escape prosecution by the authorities. The question of the location of the boundary in this case is a particularly sensitive one, because of the lucrative living and non-living resources off the mouth of the Orange River, which include the Kudu gas fields, amongst other resources.

6 Sector 2: Fisheries and Mariculture

Marine Living Resources Act 18 of 1998

Introduction

The Preamble to the South African Constitution referred to above refers to the need to rectify the injustices of the past and it is in this context that the Marine Living Resources Act 18 of 1998 (the MLRA) must be seen. It was preceded by an extensive public consultation process culminating in the Marine Fisheries White Paper which emphasised the need for transformation in the South African fishing industry.

The MLRA is rooted in a suite of principles and objectives found in section 2 which bind the Minister and any organ of State exercising power under the Act. These principles (sections 2 (a) to (i)) appear to be embedded in the notion of Ecosystem Based Management as well as the transformation agenda (section 2(j)), and are reproduced here in full:

2. The Minister and any organ of state shall in exercising any power under this Act, have regard to the following objectives and principles:

- (a) The need to achieve optimum utilisation and ecologically sustainable development of marine living resources;*
- (b) the need to conserve marine living resources for both present and future generations;*
- (c) the need to apply precautionary approaches in respect of the management and development of marine living resources;*
- (d) the need to utilise marine living resources to achieve economic growth, human resource development, capacity building within fisheries and mariculture branches, employment creation and a sound ecological balance consistent with the development objectives of the national government;*
- (e) the need to protect the ecosystem as a whole, including species which are not targeted for exploitation;*
- (f) the need to preserve marine biodiversity;*
- (g) the need to minimise marine pollution;*
- (h) the need to achieve to the extent practicable a broad and accountable participation in the decision-making processes provided for in this Act;*
- (i) any relevant obligation of the national government or the Republic in terms of any international agreement or applicable rule of international law; and*
- (j) the need to restructure the fishing industry to address historical imbalances and to achieve equity within all branches of the fishing industry.*

There is no evident hierarchy among these principles. While the question of sustainability has not yet been pronounced on by the courts, the importance of transformation has been addressed by the courts. Transformation in the fishing industry and section 2 (j) quoted above has been subject to judicial scrutiny. In *Langklip See Produkte v Minister of Environmental Affairs and Tourism* 1999 (4) SA 734 (C) the principle was described as a “foundational” principle of the Act. In *Bato Star Fishing (Pty) Ltd v Minister of Environmental Affairs and Tourism and others* 2004 (7) BCLR 687 CC; 2004 (4) SA 490 (CC) (*‘Bato Star’*) the Constitutional Court referred to section 18(5) and noted that it obliges the Minister to pay “special attention” to transformation when allocating rights in fisheries. In the latter it was further emphasised that section 2(j) should be read together with section 18(5) of the Act in access rights decisions. How best to balance the section 2 principles in individual decisions is left to the discretion of the individual authorities on a

case-by-case basis – as noted by the Constitutional Court in *Bato Star 2*, “which equilibrium is best in the circumstances is left to the decision-maker” (*Bato Star* par 48.)

The scope and application of the MLRA

The Act pertains to “fish”, defined broadly as:

the marine living resources of the sea and the seashore, including any aquatic plant or animal whether piscine or not, and any mollusc, crustacean, coral, sponge, holothurian or other echinoderm, reptile and marine mammal, and includes their eggs, larvae and all juvenile stages”. S 1(xiii) Definition

The only exceptions are sea birds and seals, which are regulated by the Sea Birds and Seals Protection Act 46 of 1973. The Act does not apply to fish found in waters which do not form part of the “sea” (Section 3(3)). Having sea birds and seals dealt with in a separate act militates against an ecosystem based approach.

Application

The Act applies to South African waters in respect of all persons, within “South African waters” defined to include the seashore, internal waters, territorial waters, the exclusive economic zone, and the continental shelf (Sect 3(1)(a)). It also includes “tidal lagoons and tidal rivers in which a rise and fall of the water level takes place as a result of the tides” (Sect 1(1 iv) Definitions), which incorporates estuaries. The Act also applies beyond South African waters to South African fishing vessels or aircraft as well as to the waters off the Prince Edward Islands (part of South African territory). The Act must be read with its accompanying regulations, which include chapters on closed seasons; species restrictions; and mariculture (R1111 in *Government Gazette* No. 19205 dated 2 September 1998 (*Regulation Gazette* No. 6284).

Categories of fishers

The MLRA regulates three categories of fishers, namely: commercial; recreational and subsistence fishers:

- *Commercial fishers.* The commercial sector comprises local and foreign fishers. Defined as fishers who harvest “for any of the species which have been determined by the Minister. . . . to be subject to the allowable commercial catch or total applied effort, or parts of both” (Definition sect 1) , commercial fishers require a right and a permit in terms of the MLRA to harvest legally. Subject to the approval of the Minister, commercial fishing rights may be freely transferred (sect 21). The Act requires that local and foreign fishing vessels be licensed in order to exercise any right of access. Local fishing vessels registered in South Africa are prohibited from fishing on the high seas unless they are in possession of a high seas fishing licence (sect 40).

Although the MLRA does not regulate small-scale commercial fishing, from 2001 access rights have been granted for limited commercial rights in certain species to ‘subsistence fishers’.

- *Subsistence fishers.* Subsistence fishers were historically not subject to domestic regulation. The MLRA defines a subsistence fisher as “a natural person who regularly catches fish for personal consumption or for the consumption of his or her dependants, including one who engages from time to time in the local sale or barter of excess catch,

but does not include a person who engages on a substantial scale in the sale of fish on a commercial basis” (sect 1(iv)).

Section 19 empowers the Minister to declare subsistence fishing communities and/or individuals, and to establish (potentially exclusive) subsistence fishing zones, to facilitate the realisation of the constitutionally guaranteed right to the “full and equal enjoyment of all rights and freedoms” as guaranteed by the Constitution.

Subsistence fishers require rights and permits; permits are not transferable except with the approval of and subject to the conditions determined by the Minister. Unlike recreational fishers, subsistence fishers are entitled to engage in sale of their excess catch (to the degree indicated in the definition).

To facilitate the implementation of the MLRA’s subsistence provisions a specialised task group (the Subsistence Fisheries Task Group (SFTG) was appointed in December 1998. The SFTG’s mandate included defining subsistence fishers, identifying coastal zones appropriate for their use, making recommendations regarding the stocks to be allocated to subsistence fishers, as well as procedures for such allocation, recommending appropriate management models for the sector, and developing guidelines regarding the establishment of a small-scale commercial sector.

A comprehensive report was published in January 2000, containing detailed recommendations, including the amendment of the MLRA’s definition of “subsistence” fisher and the introduction of a new sub-category of commercial fishers (small-scale commercial fishers) for those persons falling within the generic “artisanal/subsistence” category who fish purely for sale, the assignment of suitable coastal resources to the subsistence sector, and co-management of the sector within a devolved system of management responsibilities. (Subsistence Fisheries Task Group) *Draft Recommendations for Subsistence Management in South Africa* Prepared for the Chief Director, Marine and Coastal Management, Department of Environmental Affairs and Tourism, South Africa, 2000, (‘SFTG’)

- *Recreational fishers*. Defined as those who fish “for leisure or sport and not for sale, barter, earnings or gain” (sect 1), this sector traditionally targets species such as abalone, rock lobster and linefish, which are increasingly suffering over-fishing and as they provide an important source of food for subsistence fishers, conflicts over these resources are inevitable. Management of recreational fishing is thus difficult; control measures such as bag limits and closed season are utilised. Recreational fishers require permits (which are non-transferable) and may not sell, barter or trade their catch.

Fisheries management under the Act

Introduction

The MLRA is rooted in the basic fisheries management principles, of optimum utilisation, conservation, and endorsement of the precautionary approach (sect 2 quoted above). The Act makes use of output controls in the form of Total Allowable Catches (TACs) and individual quotas, in combination with input controls, such as fisher and vessel licensing, to pursue these objectives, as discussed below.

The determination of the Total Allowable Catch (TAC) (s 14(1))

The Act empowers the Minister to determine the total allowable catch (TAC), the total applied allowable effort or a combination thereof (sect 14). The TAC is defined as:

the maximum quantity of fish of individual species or groups of species made available annually, or during such other period of time as may be prescribed, for combined recreational, subsistence, commercial and foreign fishing in terms of section 14.

There is no express obligation on the Minister to take into account scientific advice in setting the TAC. He or she must, however, be guided by the principles contained in section 2 of the Act, which include optimal utilisation of marine living resources, conservation and the precautionary principle.

The allocation of quotas (s 14(2))

The Minister must further determine what portions of the TAC, the total applied effort, or a combination thereof, is to be allocated in any given year to subsistence, recreational, local commercial and foreign fishing, respectively.

Granting of rights to fish (s 18)

Once the TAC has been set by the Minister and he or she has assigned portions of it to the various fishing sectors, individual fishers must apply for access rights. In terms of section 18, commercial and subsistence fishers, and those wanting to engage in marine aquaculture, require a right from the Minister to engage in such activity. Applications for rights must be submitted to the Minister, and an accompanying environmental impact assessment may be required. In determining rights allocations the Minister must have particular regard to “the need to permit new entrants, particularly those from historically disadvantaged sectors of society” (sect 18). Numerous allocation decisions under the MLRA in terms of this section have to date been challenged in court, as discussed above. In *Minister of Environmental Affairs and Tourism and others v Pepper Bay Fishing (Pty) Ltd*, 2004 (1) SA 308 (SCA). the Supreme Court of Appeal reversed the lower court’s decision and held that the Minister and his officials were correct in not condoning a procedural defect in the respondent’s application for right under section 18(2).

Granting of permits to fish (s 13)

Rights holders under section 18 may not exercise the right unless they have also been granted a permit by the Minister in terms of section 13.

Marine protected areas and fisheries management areas

Marine protected areas

Section 43 of the Act provides for the declaration of marine protected areas (MPAs). The Minister is empowered to establish such areas in order to protect the marine fauna and flora and the physical features on which they depend; to facilitate fishery management by protecting spawning stock and provide pristine communities for research; and diminish any conflict that may arise from competing uses in the area in question (sect 43). Various “closed areas” have been declared by the Minister in terms of the regulations under the MLRA; the geographic details of such areas are detailed in the regulations.

Activities prohibited within MPAs without the requisite permission include fishing, destruction of fauna or flora other than fish, extraction of sand or gravel, depositing of waste or disturbing the natural environment, erecting structures within the MPA, and conducting any activity that adversely impacts on the ecosystems of the area (sect 43(2)).

Fisheries management areas

The MLRA also provides for a new fisheries management mechanism, empowering the Minister to declare fisheries management areas, for the management of identified species (sect 43). The Minister may in addition approve a plan for the conservation, management and development of the fisheries in question.

6.5 Marine mammals

Whales are classified as “fish” in terms of the MLRA. They are dealt with in the 1998 Regulations, together with dolphins and turtles. Regulation 58 prohibits a number of activities in relation to whales, including killing and “disturbing or harassing” whales, or being in possession of any part or product of a whale without a permit (Reg 58(1)).

Marine aquiculture

For the first time in South Africa, marine aquiculture is explicitly regulated by legislation. The MLRA defines ‘mariculture’ as ‘the culture or husbandry of fish in sea water’ (Sect 1 definitions). Marine aquaculture can only be conducted by the holder of a right and permit, who may be required to submit an environmental impact assessment report before such permission is granted by the Minister (sect 18(1)). Chapter 6 of the Regulations details specific rules regarding mariculture, including application procedures and a duty to minimise harmful environmental impacts.(regs 60 to 93) Regulation 69 is concerned with the environmental impact assessment of mariculture, emphasising that mariculture permit holders may be required to commission an EIA of the activities in question and to submit a report thereof to the Minister.

Law enforcement

The provisions of the MLR Act are enforced by Fishery Control Officers (FCOs), Honorary Marine Conservation Officers and observers on vessels issued with a fishing licence (sects 9 and 50). In January 2005 MCM launched an operational high seas patrol

vessel, the Sara Baartman which considerably bolstered its operational capacity. Three smaller but substantial vessels have also joined the fleet.

FCOs are recognised as peace officers (as defined in the Criminal Procedure Act 51 of 1977). They enjoy extensive powers within South African waters which they can exercise both with, and without, a warrant, (including the power to enter and search fishing vessels, to check fishing permits, and to seize specified goods (S 51(4)). Beyond South African waters, FCOs can exercise the power of hot pursuit, in accordance with international law (sect 52). It is recognised that there is a need to improve compliance with the provisions of the MLRA. In the judicial sphere, progress was made towards improved processing of marine law violations with the establishment of a specialised environmental court in Hermanus, Western Cape in March 2003 but those was later disbanded for budgetary reasons.

7. Sector 3: Environmental Management, protected areas and wildlife conservation

As indicated in Part 2 above ‘environment’ and ‘nature conservation’ excluding national parks and marine resources are a concurrent national and provincial matter. As a result a number of national and some provincial statutes are relevant.

At the national level the flagship environmental statute of the ‘new’ South African government is the National Environmental Management Act 107 of 1998 (the ‘NEMA’). It is a framework act and provides the point of departure from which a number of other environmental statutes such as the ICM Act and MLRA described below are examined. Other relatively new statutes include the National Water Act, 36 of 1998, the NEM: Protected Areas Act 57 of 2003, the NEM: Biodiversity Act 10 of 2004, the National Forests Act 84 of 1998 and others.

The NEMA is based on the notion of ‘sustainable development’ which is defined in the Act as:

the integration of social, economic and environmental factors into planning, implementation, and decision-making so as to ensure that development serves present and future generations Sect 1(1)(xxix).

It goes on to elaborate a number of considerations constitute ‘sustainable development’. Relevant to an ecosystem-based management approach are the following:

[s]ustainable development requires the consideration of all relevant factors including the following:

- (i) That the disturbance of ecosystems and loss of biological diversity are avoided; or, where they cannot be altogether avoided, are minimised and remedied;
- (ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- (vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- (vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- (viii) that negative impacts on the environment and on people’s environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied. (Sec4(a))

Sustainable development is elaborated on in the NEMA by a set of comprehensive national environmental management principles according which all organs of state have to comply. These include the preventative principle, the precautionary principle, the polluter pays principle and others. But for the purposes of this report the following principle is particularly relevant:

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

This principle resulted in the enactment of the ICM Act described in the next section titled ‘Sector 4’.

National Water Act 36 of 1998

As South Africa is a waters-stressed country, the National Water Act 36 of 1998, administered by the Department of Water Affairs and Environment, plays a pivotal role in securing both an equitable distribution of fresh water amongst interested and affected parties and also ensuring the maintenance of water quality including maintaining coastal water quality.

While the National Water Act includes specific provisions regarding pollution of coastal waters (for example, the discharge of waste through “a sea outfall”), it does not encompass a number of other offshore activities (for example, pollution from offshore prospecting and mining activities). This is left to the Department of Minerals to regulate and control but it would be desirable for the Department Water and Environment to have powers in this regard. The National Environmental Management Act 107 of 1998, could possibly be invoked for this purpose as it empowers the Director-General of Environmental Affairs to enter into agreements with organs of state (sect 39).

Although provisions controlling water pollution appear in statute law, these must be seen in the context of the common law, particularly nuisance and neighbour law. The importance of the common law was emphasised in *Rainbow Chicken Farm (Pty) Ltd v Mediterranean D Woollen Mills (Pty) Ltd* 1963 (1) SA 201 (N) at 205A where the Court held that “[t]he producer of the effluent, quite apart from statutory duties imposed on him by sections 21(1) and (2), [of the 1956 Water Act] owes a common law duty of care towards others”. The applicant, successfully obtained an interim interdict stopping the respondent from discharging effluent from its dyeing operations into the river.

The law of nuisance has been applied in numerous water pollution cases recorded in the South African Law Reports. For example, in *Colonial Government v Mowbray Municipality and others* (1901) 18 SC 453 the plaintiff obtained an interdict against the municipality, as its railway line was being damaged by storm- and surface water run-off from a new housing development. The Court found that the municipality was carrying on

a nuisance and granted an interdict restraining the defendant from allowing contaminated water to flow onto the railway line.

8...Sector 4: Coastal Zone Management

National Environmental Management: Integrated Coastal Management Act 24 of 2008 (the 'ICM' Act)

The National Environmental Management: Integrated Coastal Management Act 24 of 2008 (the 'ICM' Act) replaced the out-dated and outmoded Sea Shore Act of 1935 relatively recently which until that time had been the oldest environmental legislation on the South Africa statute book.

A general and positive feature of the ICM Act is that it promotes the notion of Integrated Coastal Area Management ('ICAM') which is the recognised international best practice in coastal area management. The 1935 Sea Shore Act had been drafted at a time when the law took scant cognisance of ecological processes or principles of environmental management. The now repealed Sea Shore Act applied bluntly to the sea and shore "below high water mark", paying no regard to the fact the coastal area is a unified, dynamic and sensitive ecosystem and that the area landward of high water mark is an inherent part of the coastal ecosystem which should be managed in an integrated and sensitive way. This is linked to the fact that a plethora of government agencies ranging from national, to provincial, to local spheres of government are all, in one form or another involved in, developing or managing the coastal area.

The new 'ICM' Act applies to the 'Coastal Zone' which is defined very broadly as comprising of four components: Coastal Public Property (sects 7 to 15); the; Coastal Protection Zone (sects 16 and 17); Coastal Access Land (sects 18 to 20); Coastal Waters (sect 21); Coastal Protected Areas (sect 22); Special Management Areas (sects 23 to 25) and Coastal Set-back lines. Each of these seven is in turn extensively defined creating a cascade of complex and technical definitional terms but which have the welcome result that the future law will at least in theory facilitate a more holistic and integrated approach to the management of the entire coastal environment.

The cornerstone of the ICM Act is that it preserves the age-old Roman Law *res omnium communes* concept as well as the Roman Dutch Law notion of *res publicae* in that the sea and sea-shore is not capable of private ownership and is subject to the use and enjoyment of all. This is particularly relevant in the transformed South Africa where the gap between rich and poor is acute. The ICM Act prevents the coastline being privately owned by incorporating the Roman law doctrine of the public trust stating that ownership of 'Coastal Public Property', referred to above, 'vests in the citizens of the Republic' and must be held 'in trust by the state on behalf of the citizens of the Republic'.

A related and further welcome feature of the ICM Act is that it expands the notion of a public servitude or right of way to the sea and sea-shore which also has its roots in the

ancient Roman Dutch law. The Act provides that every person has the right of reasonable access to, and the right to use and enjoy, Coastal Public Property. It goes on to oblige coastal local authorities to provide Coastal Access Land to provide access to that part of the coast which is defined as ‘coastal public property’

Another and related deficiency of the now replaced Sea Shore Act was that it paid scant regard to the management of estuaries. Estuaries provide numerous ecosystem services including providing a unique ecosystem and biodiversity partly because of the salt water and fresh water mixing. South Africa’s estuaries have become degraded partly because of inappropriate development and more specifically because of the damming of river systems upstream thus interfering with the natural flushing effect which estuaries have had during periods of flooding. A welcome feature of the ICM Act is that a specific chapter is devoted to estuaries. The main tool here is that the Minister of Environmental Affairs must with the concurrence of the Minister of Agriculture, Forestry and Fisheries develop a national estuarine management protocol which must meet certain criteria set out in the Act. These will be implemented by lower spheres of government under estuarine management plans.

The key way that integrated coastal management is promoted is contained in chapter 6 of the Coastal Management Act. This requires that each of the three spheres of government have to develop coastal plans for their respective spheres. Thus the Act requires the Minister of Water and Environment to adopt a national coastal management programme within a stipulated period. This must “be a policy directive on integrated coastal management and [must] provide for an integrated, co-ordinated and uniform approach to coastal management...including the use of coastal resources”. Similarly at the provincial level each MEC of each of the four coastal provinces must within four years of the act coming into force adopt a provincial coastal management programme. Its contents must include “a vision for the management of the coastal zone in the province, including the use of coastal resources.

Finally at local level of government coastal municipalities must prepare and adopt within four years a municipal coastal management programme. These municipal coastal management programmes must include “a vision for the management of the coastal zone within the jurisdiction of the municipality including sustainable use of coastal resources”, coastal management objectives, priorities and strategies, performance indicators as well as other stipulated matters. Provision is made for by-laws to be made in this regard. Sensibly the provides that these can be part of the Integrated Development Plan and Spatial Development Framework which has to be adopted in accordance with the relevant planning laws.

The concluding part of this chapter perhaps optimistically provides for the co-ordination of plans required by other legislation, for example NEMA, and the various coastal management programmes described above. This chapter also makes provision for Coastal Zoning Schemes for areas within the coastal zone but it is difficult to ascertain how these will dovetail with the zoning schemes made under Land Use Planning Ordinance in the Western Cape and the equivalent planning legislation in other coastal provinces.

A further chapter entitled Protection of Coastal Resources is dedicated among other things to assessing, avoiding and minimising adverse effects on the coastal environment. It does so in different ways including stipulating that any organ of state that is authorised by any law to grant consent for any activity which may cause adverse effects in the coastal environment must be satisfied that it will not cause irretrievable and long term effects among other matters. This would cover all planning authorisation, mining and so on. It provides that if the national Minister has reason to believe that a person is carrying out, or intends to carry out, an activity that is having or likely to have an adverse effect on the coastal environment then he or she may issue a coastal protection notice to mitigate such adverse effects. The Minister and the relevant MEC of the coastal province, may also issue a written report and removal notice to any person not only if it contravenes any law but also if it “is likely to have an adverse effect on the coastal environment...”.

This part of the chapter is applicable only to the Coastal Buffer Zone referred to above. No authorisation may be issued in the coastal buffer zone without an environmental impact assessment report. In any event any planning or development authorisation must take cognisance to the purposes of the Coastal Buffer Zone. Certain activities are also prohibited in the Coastal Buffer Zone save in exceptional circumstances which would then require a permit.

A ubiquitous problem particularly along the unique Transkei coast is illegally constructed dwellings often without proper planning permission and usually for holiday purposes. The Act tackles this problem by providing that a person who had unlawfully constructed a building or other structure on Coastal Public Property must within 12 months of the commencement of this Act either apply for a coastal land lease provided for in chapter 7 or demolish the building or structure and restore the site to its original condition

The South African coastline has seen unprecedented ad hoc creeping ribbon development over the last few decades and in particular an unprecedented growth of golf coast estates the southern Cape Coast. This results in loss of South Africa’s unique biodiversity and has put immense pressure on scarce water resources. Furthermore pressure on coastal development is aggravated by the fact that the financial resource base of local coastal authorities increases the more residential units fall under its jurisdiction.

Coastal waters

The marine environment, especially the coast, is burdened by the effects of land-based pollution.

It is evident from the above that South Africa has in place a sophisticated legislative system for the protection of coastal water quality. With the passing of the National Water Act 36 of 1998, this legislative framework has been refined and acknowledges the importance of ecological conditions.

9. Sector 5: Tourism

South Africa’s marine biodiversity provides the basis for a vibrant marine-based tourism sector which has grown steadily over the years and runs a close second to the country’s

internationally-renown protected areas network which is the main draw-card for foreign visitors. Whale viewing, shark diving, scuba diving and dolphin viewing have become popular experiences for tourists visiting the country's coastal areas. Shark diving provides a unique experience for viewing both harmless species (whale sharks and ragged-tooth sharks) and the apex predators such as great white sharks and tiger sharks. There are currently 12 permit-holders for cage diving in connection with great white sharks in South Africa, each restricted to operating one vessel. Marine and Coastal Management (MCM) has steadily increased the number of permits issued for boat-based whale watching since 1999, to a current maximum of 18 permits. In 2006, MCM began efforts to regulate scuba diving within marine protected areas with the institution of a permit system.

While marine-based tourism activities have the potential to generate interest in marine conservation, socio-economic empowerment, and livelihood opportunities for coastal communities, there is a need for rigorous management to ensure that these activities are undertaken in an environmentally and socially responsible manner. Failure to do so could result in a reduction of the health of our marine biodiversity as well as threaten the safety of those involved, including tourists.

10. Sector 6: Oil and Gas

Offshore exploration for oil in South Africa commenced in 1965 with the grant of an exclusive exploration license to a parastatal, the Southern Oil Exploration Corporation (SOEKOR). Exploration has resulted in 20 gas and nine offshore oil discoveries. The Moss gas field and the Oribi Oil Field are currently in production. The Moss gas project involves extracting natural gas and associated condensate (unrefined petrol and diesel) from two offshore fields, FA and EM, plus their satellites, getting it to the offshore drilling and production platform, separating the gas from the condensate, piping both to the onshore refinery, and converting them to high-quality diesel and petrol fuels, liquid petroleum gas, kerosene, and alcohol. In 2001, Moss gas was renamed PetroSA and it includes the upstream exploration and development organization, SOEKOR. Oil production from the Oribi Oil Field is expected to yield up to 18 million barrels over a period of four years.

11. Sector 7: Ports and coastal transport

South Africa is situated on one of the world's busiest ship transport routes, particularly for the transport of crude oil from the Middle East to Europe and the Americas. More than 4 000 ships pass around the Cape of Good Hope every year and approximately R4,2 billion in revenue is generated every year by transporting cargo through South African ports. The SA National Port Authority administers the seven commercial ports in South Africa—Richards Bay, Durban, East London, Port Elizabeth, Mossel Bay, Cape Town and Saldanha Bay. Vessel traffic at South African ports is increasing steadily, with more than 14 000 vessels recorded in 2006 (see Table 1 below).

TABLE 1
Vessel Arrivals at South African Ports: January–December 2006.¹

	Richards Bay	Durban	East London	Port Elizabeth	Mossel Bay	Cape Town	Saldanha Bay	All Ports
General cargo	249	811	10	57	5	372	87	1 591
Bulk	1 004	705	17	106	2	254	295	2 383
Containers	10	1 551	65	559	0	1015	1	3 201
Tankers	170	635	61	63	63	190	14	1 196
Passenger vessels	17	61	13	22	12	44	0	169
Vehicle carriers	1	288	104	105	0	1	0	499
RO-RO vessels	8	68	1	1	1	9	0	88
Other	11	42	3	2	3	12	0	73
Total ocean-going	1 470	4 161	274	915	86	1 897	397	9 200
Total coastwise	40	108	23	30	16	73	10	300
Total foreign fishing vessels	17	174	10	89	336	757	52	1 435
Total SA trawlers	27	53	8	587	1790	124	18	2 607
Barge	6	10	0	1	0	3	2	22
Cable layer	0	0	0	0	0	8	0	8
Dredger	0	3	0	0	0	8	0	11
Hopper	0	0	0	0	0	0	0	0
Naval vessels	1	7	3	2	0	25	0	38
Oil rig	0	0	0	0	0	0	2	2
Search & research	4	8	7	3	11	60	3	96
Tug	8	30	5	5	227	77	8	360
Yacht	1	2	0	0	0	3	0	6
Other	1	10	2	2	82	9	0	106
Total Miscellaneous	21	70	17	13	320	193	15	649
TOTAL	1 575	4 566	332	1 634	2 548	3 044	492	14 191

Shipping routed around the Cape is subject to extreme sea and weather conditions. This greatly increases the risk of major marine pollution incidents, particularly from oil tankers, but also from ballast discharge and vessels carrying more lethal cargoes such as nuclear waste. The introduction of alien invasive marine organisms also occurs via marine transport, both those carried in ballast water when the ballast water is discharged by vessels loading cargoes at South African ports as well as those attached to ships' hulls. The Mediterranean mussel (*Mytilus galloprovincialis*), which is replacing the indigenous black mussel (*Chloromytilus meridionalis*), is almost certain to have been introduced by ships. Ironically, the Mediterranean mussel has become the mainstay of the mussel mariculture industry in Saldanha Bay.

Marine Traffic Act 2 of 1981

The Marine Traffic Act deals with marine traffic in the Republic. The Act provides that it is an offence to sink or dump any vessel, wreck or bulk except with permission of the SAMSA (sect 6). Secondly, the Act provides that the Minister is empowered to declare

¹ National Ports Authority *Annual Report* (2006), see: <http://www.npa.co.za/>

safety zones in respect of offshore installations which also have relevance to pollution (sect 8C).

Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 (the MARPOL Act)

The MARPOL Act itself, which is administered by the Department of Transport, is short as it includes a lengthy technical schedule – including the MARPOL Convention along with its Annexures 1 and 2 – by reference. The Act provides that the State President may ratify any amendment to the convention and give effect to any amendment or addition to the convention by proclamation in the *Gazette*. It also provides that the Minister may make regulations to give effect to the convention and a number have been passed, which are now outlined.

First, two sets of regulations have been passed to give effect to Annexure 2 of MARPOL, which deals with the carriage of noxious liquid substances in bulk. The first set gives statutory effect to the IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (the IBC Code). The second set of regulations gives statutory effect to the IMO Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (the BCH Code).

Specific regulations have been passed to give effect to Annexure 5 of MARPOL, which deals with garbage generated on board ships, as seen above. These provide for the prevention of pollution by garbage and for the provision of reception facilities for garbage.

CONCLUSIONS

The above survey reveals South African legislation dealing with coastal and marine resources by and large is fragmented and makes for divided un-coordinated control. At national level relevant legislation resides in different government Ministries such as the DWE, Department of Transport and now with the hiving off of the marine fisheries section from the environment to the agricultural department the possibility of an ecosystem management approach to the management of marine and coastal resources is made more difficult in the writers view.

ANNEXURE 1

SOUTH AFRICA: TABLE OF STATUS OF RATIFICATION OF RELEVANT INTERNATIONAL CONVENTIONS

Marine and coastal conventions of general application
Convention on the International Maritime Organisation, 1948 (acceded February 1995)
United Nations Convention on Law of the Sea, 1982 (Acceded December 1997)
Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, 1985 “Nairobi Convention” (ratified May 2003)
Convention for the Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, 1981 “Abidjan” (Acceded)
Convention on the Continental Shelf, 1958 (acceded April 1963)
Convention on the High Seas, 1958 (acceded April 1963)
Convention on the Territorial Sea and Contiguous Zone, 1958 (acceded April 1963)
Convention on the Protection of the Underwater Cultural Heritage, 2001 (neither signed nor ratified)
Conventions marine resources with specific reference to fisheries, marine mammals and sea birds
International Convention for the Regulation of Whaling, 1946 (ratified May 1948)
Convention on Fishing and Conservation of the Living Resources of the High Seas, 1958 (acceded April 1963)
International Convention for the Conservation of Atlantic Tunas, 1966 (acceded October 1997)
Convention on the Conservation of the Living Resources of the Southeast Atlantic, 1969 (ratified October 1970)
Convention on the Conservation and Management of Fishery Resources in the South East Atlantic, 2001 (signed in 2001, not ratified)
Agreement on the Conservation of Albatrosses and Petrels, 2001 (signed and ratified November 2003)
International Convention for the Conservation of Atlantic Tunas, 1966 (acceded October 1997)

Conventions relevant to marine pollution
Convention for the Prevention of Marine Pollution from Land-Based Sources, 1974 (neither signed nor ratified)
International Convention for the Prevention of Pollution from Ships, 1973 “MARPOL” (acceded 1978)
Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships
Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships
International Convention for the Prevention of Pollution of the Sea, 1954 (not a party)
International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (acceded July 1980)
International Convention on Civil Liability for Oil Pollution Damage, 1969, “CLC” (acceded March 1976)
International Convention on Liability and Compensation for Damage in Connection with the Carriage of Noxious and Hazardous Substances at Sea, 1996 (not a party)
Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, 1996 (Acceded)
Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (neither signed nor ratified)
International Convention on the Control of Harmful Anti-Fouling Systems, 2001 (neither signed nor ratified)
International Convention on Civil Liability for Oil Pollution Damage, 1992 (Acceded October 2004)
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (Acceded October 2004)
Conventions related to natural and cultural resources
Convention relative to the Preservation of Fauna and Flora in their Natural State, 1933 (ratified November 1935)
International Plant Protection Convention, 1951 (signed December 1951, ratified September 1956)
International Convention on the Protection for New Varieties of Plants, 1961 (acceded October 1977)
International Treaty on Plant Genetic Resources for Food and Agriculture, 2001 (neither signed nor ratified)
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (“Ramsar”), 1971 (ratified March 1975)
Convention Concerning the Protection of the World’s Cultural and Natural Heritage, 1972 (acceded July 1997)
Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973, “CITES” (ratified July 1975)
Convention on the Conservation of Migratory Species of Wild Animals, 1979 (acceded September 1991)
Protocol to amend the Convention on Wetlands of International Importance Especially as

Waterfowl Habitat, 1982 (ratified May 1983)
Convention on Biological Diversity, 1992 (ratified November 1995)
Cartagena Protocol on Biosafety to the Convention on Biodiversity, 2000 (signed June 2003, acceded August 2003)
Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, 1994 (ratified September 1997)
Convention on the Law of the Non-navigational Uses of International Watercourses, 1997 (acceded October 1998)
Hazardous substances, pollution and waste management
Vienna Convention for the Protection of the Ozone Layer, 1985 (acceded January 1990)
Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 (acceded January 1990)
Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, 1989 (Basel) (acceded May 1994)
Control of Transboundary Movement and Management of Hazardous Waste within Africa, 1991 (neither signed nor ratified)
United Nations Framework Convention on Climate Change, 1992 (acceded August 1997)
Framework Convention on Climate Change: Kyoto Protocol, 1997 (accede February 2004)
Convention on the Prior Informed Consent Procedure for certain Hazardous Chemicals and Pesticides in International Trade, 1998 (neither signed nor ratified)
Protocol on Liability and Compensation for Damage resulting from Transboundary Movement of Hazardous Waste and their Disposal, 1999
Revised Protocol on Shared Watercourses (2001)
Cartagena Protocol on Biosafety to the Convention on Biodiversity, 2000 (signed June 2003, acceded August 2003)
Convention on Persistent Organic Pollutants, 2001 (“Stockholm”) (signed 2001, ratified, 4 September 2002)
Southern Africa (SADC) and Africa region
African Convention on Conservation of Nature and Natural Resources, 1968 (not a party)
Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, Lusaka, 1994 (signed but not ratified)
Treaty of the Southern African Development Community, 1992
Agreement Amending the Treaty of the Southern African Development Community, 2001
Protocol on Fisheries, 2001 (own emphasis)
Protocol on Mining, 1997
Namibia-South Africa Agreement on the Establishment of a Permanent Water Commission, 1992
Protocol on Shared Watercourse Systems in the Southern African Development Community, 1995 (ratified 1997)
Revised Protocol on Shared Watercourses in the Southern African Development Community Region, 2003

Protocol on Trade, 1996
Amendment Protocol on Trade, 2000
Protocol on Wildlife Conservation and Law Enforcement, 1999
Declaration on Agriculture and Food Security, 2004
Revised 2003 African Convention on Conservation of Nature and Natural Resources 1968 (“Algiers”) (neither signed nor ratified)

ANNEXURE 2

TABLE OF RELEVANT SOUTH AFRICAN STATUTES

National Environmental Management Act 107 of 1998 (‘NEMA’)

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

Marine Living Resources Act 18 of 1998

Maritime Zones Act 15 of 1994;

Merchant Shipping Act 57 of 1951;

Environment Conservation Act 73 of 1989;

Marine pollution related statutes

Marine Pollution (Intervention) Act 64 of 1987

Marine Pollution (Control and Civil Liability) Act 6 of 1981

Dumping at Sea Control Act 73 of 1980

Wreck and Salvage Act 94 of 1996

National Heritage Act 25 of 1999

Health Act 63 of 1977

International Health Regulations Act 28 of 1974

Hazardous Substances Act 15 of 1973

(COASTAL) PROVINCIAL LEGISLATION

Cape Nature and Environmental Conservation Ordinance 19 of 1974

KwaZulu-Natal Nature Act 29 of 1992

KwaZulu-Natal Nature Conservation Management Act 9 of 1997

References/Selected Bibliography

Brink PD “Sea and Sea-shore” in WA Joubert GN (ed) *The Law of South Africa* vol 24 (First re-issue) 2000.

Devine D “South African Maritime Legislation, Principles Inherent in the Act and their Implementation” (1995) 10 *TIJMCL* 556.

Devine DJ “Maritime zone legislation for a new South Africa: Historical, contemporary and international perspectives” (1992) 17 Special Publication Institute of Marine Law

Glavovic BC and Cullinan C “*The Coast*” Chapter 23 in Strydom & King Fuggle & Rabie’s *Environmental Management in South Africa* (2nd ed 2009) 868

Sowman MR “The Status of Coastal Zone Management in South Africa” (1993) 21 *Coastal Management* 163.

Jan Glazewski “Towards a Coastal Zone Management Act for South Africa” (1997) 4 (1) *SAJELP* 1

Lombard, A.T., Strauss, T., Harris, J., Sink, K., Attwood, C. & Hutchings, L. 2004: South African National Spatial Biodiversity Assessment 2004: Technical Report. Volume 4: Marine Component. South African National Biodiversity Institute, Pretoria

McLean B and Glazewski JI “*Marine Systems* ” Chapter 14 in Strydom & King Fuggle & Rabie’s *Environmental Management in South Africa* (2nd ed 2009) 455

UNDP, 2006: Agulhas & Somali Current Large Marine Ecosystems Project. GEF Project document.

Government documents

White Paper for Sustainable Coastal Development in South Africa Department of Environmental Affairs and Tourism (Coastal Management Policy Programme) April 2000.

Our Coast Our Future: Coastal Policy Green Paper: Towards Sustainable Coastal Development in South Africa Department of Environmental Affairs and Tourism September 1998.

A Marine Fisheries Policy for South Africa: White Paper, Chief Directorate of Sea Fisheries of the Department of Environmental Affairs and Tourism May 1997.

Branch G, Baird P, Cochrane K, Moola Z, Zulu P, Butterworth D, Sowman M and Wickens P *Review of Access Rights: Options for South Africa* Final Report of the Access Rights Technical Committee to the Fisheries Policy Development Working Committee Cape Town FPDC 1996.

Department of Environmental Affairs and Tourism *Where have all the fish gone? Measuring transformation in the South African fishing industry* 2002.

Department of Environmental Affairs and Tourism *Policy for the allocation of commercial fishing rights in the abalone industry: 2003* October 2003.

Fishing Industry Handbook (28ed) Exbury Publications 2000.