The Republic of South Africa Country Profile

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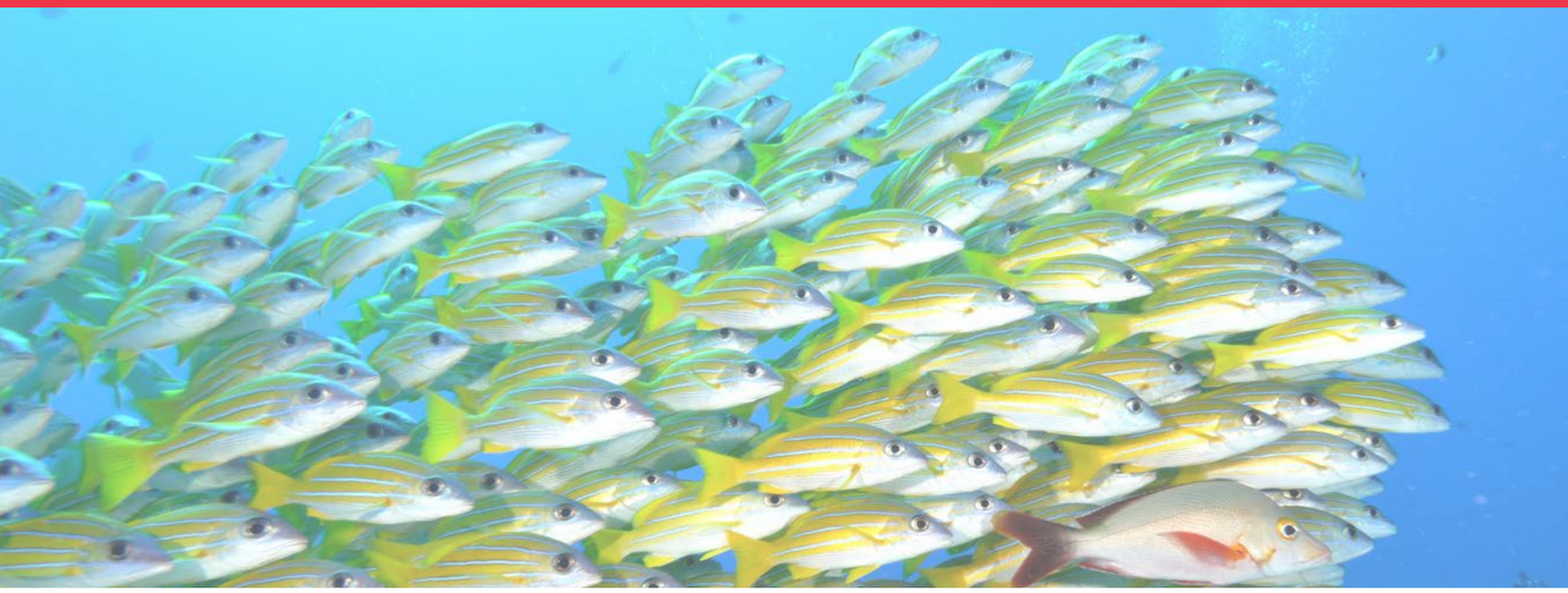

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The Republic of South Africa

Key Country indicators

Location

South Africa geographical Land area is (1,000 sq. km) 1,213 and has a population of (millions) 55.0 (The little green data book, World Bank 2017). The South Africa's ecosystem is divided into two: the western and eastern ecosystems. The west coast stretches from the Orange River bordering Namibia which has a higher productivity of commercial fisheries and the Ponta do Ouro in the eastern of Mozambique, which is less productive but has a diversity of species including both Endemic and Indo-Pacific species. The coastline supports a wide range of coastal ecosystem like kelp beds, mixed shores, sandy and rocky ecosystem, estuaries and seagrass.

Population (million)	55.0
GDP US $ (trillion)	314.8
GNI	
Total land area	1,213 km^2
Length of coastline	3,623 km
Exclusive Economic Zone	
Continental shelf	1 071 883 km^2
Mangrove	30.5 km^2
Coral reef	
Marine protected area	%13.4 of territorial waters

Source: (World Bank, 2017)

Marine resources

Mangroves

There are about six species of mangrove in South Africa and these mangroves are limited to Eastern coastline. They stretch from Mozambique at Kosi Bay to Nahoon Estuary of East London. Mangrove cover between 1660 ha and 3000 ha of land (Ward and Steinke 1982, FAO 2007). Rhizophora mucronate, Xylocarpus granatum, Bruiguiera gymnorhiza, Lumnitezera racemose, Ceriops tagal and Avecenia marina. The dominant of these species is the Avecenia marina which occurs mainly in the Mhlathuze estuary (Taylor and others 2004, Raijkaran and others, 2004).

Salt Marshes

These cover a total of 212344ha of which 2517ha (20 per cent) occur in the WIO region. Extensive salt marshes occur in St. Lucia, Mhlathuze and in Richards Bay. They are spread and distributed supratidal, intertidal and subtropical regions of the country. There are few common species of salt marshes which include: Cordgrass Spartina maritima, the Glasswort Sarcocorna tegetaria and the

Marsh samphire Salicornia meyeriana (ASCLME 2012e). These saltmarshes are clustered into zones or habitats supports a different type of species. Saltmarshes serve a number of functions including sediment stabilization, provide feeding and nursery for marine species and estuary ecosystems filtration of pollution.

Seagrass beds

South Africa hosts five seagrass beds which are only limited to the sheltered waters of estuaries (ASCLME 2012e). These include: C. rotundata, C. serrulata, H.ovalis, Z. capensis, T. haprichii species. The most dominant of the seagrass species, are the Zostera Capensis sheltered in the east coast estuaries with muddy bottoms and they are estimated to cover 700ha (Bandeira and Gell 2003). The rocky shorelines are the dominant with T. ciliatum species. Seagrasses are known for their reproductive ecosystem. They serve as breeding grounds for most fishes and vertebrates.

Ecosystem management and conservation

The challenge

There is much potential to use the coastal and marine resources to support economic growth and livelihoods. However, this is under threat due to over exploitation and degradation of the resources.

The Situation

Ecosystems services

The ecosystem services provided by oceans and their resources are important for the wellbeing of South Africans. Seafood is an important part of the diet in certain coastal communities in South Africa such as in KwaZulu-Natal. On an annual basis, about 312,000 tonnes of seafood is eaten which translates to 6.25 kg per capita, making this an important factor of food security (WWF-SA 2014).

Other ecosystem services include flood attentuation, storm surge protection, waste assimilation, biodiversity habitat, tourism and recreation. These activities provide significant opportunities for economic and income growth to the approximately 30 per cent of South Africans who within 60km of the coast (DEA 2000).

Mangrove degradation

Due to the paucity of information about mangrove, estimates are always drawn on the trends of mangrove in the WIO region. However, most of the challenges and threats are the same in the WIO region but with varying degrees of intensity. For examples issues of conversion, mangrove clearance in favor of tourism, inadequate education on mangrove conservation, lack of knowledge on mangrove environmental awareness, inadequate law enforcement, economic growth, overharvesting for timber and charcoal and firewood, pest infestation, pollution from industries, domestic run offs agricultural runoffs and some incidents of oil spills. Sedimentation and soil erosion are also among the cause of mangrove destructions, climate change issues, clearing land for industrial development. The on-going coastal development and climate change pose the greatest risk to the mangrove ecosystem. An increase in sea level as result of climate change has resulted into flooding of the mangrove areas. Coastal development has witnessed the degradation of the mangrove ecosystem.

Human activities

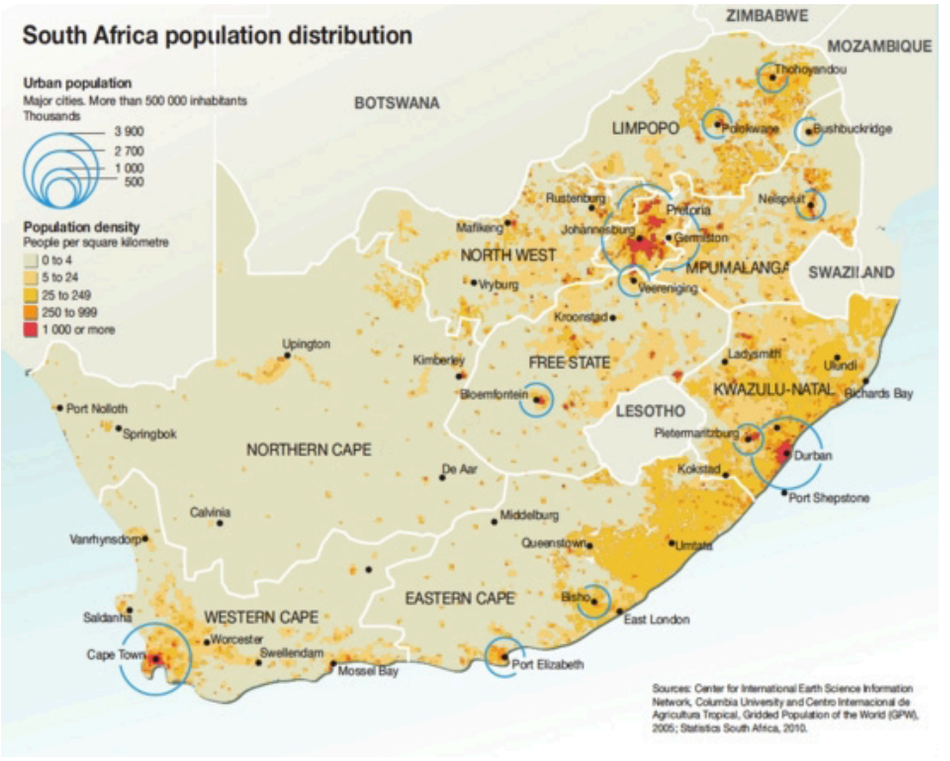
Threats to seagrass beds are similar in the WIO region and these threats are widely caused by anthropogenic and natural activities. Like any other ecosystem, saltmarshes in South Africa are threatened by both human and natural activities. For example, closure of river mouth, water abstraction, urban and industrial developments, salt works, mining, fishing, boating, fishing, livestock grazing, trampling and siltation.

The constraints

Population growth

About 30 per cent of the population is estimated to live within 60 km of the South African coastline (DEA 2000). Population growth and coastal development are major drivers of change as they put pressure on South Africa's coastal ecosystems and marine resources through increased exploitation and pollution.

Figure 1: South Africa Population Distribution



Source: (Grid Arendal / CC BY-NC-SA 2.0)

Climate change

Climate change is a global threat whose impacts are being felt in South Africa.

About 17% of South Africa's coast has some form of development within 100m of the shoreline (WWF ocean facts). Climate change, combined with the pressures from urban developments at the coast and increasing vulnerable ecosystems are likely to hinder the ability of the communities to withstand the impacts of climate change. This has negative impacts of the ability of the coastal resources to

provide ecosystem services. Sea level rise is threatening about a third of coastal developments that are within 100m of the shoreline (WWF ocean facts).

The effects of climate change in South Africa

- Sea temperature changes
- The occurrence and degree of coral bleaching events is increasing
- Rising sea levels
- Coastal erosion linked to the increased frequency and severity of weather events
- Growing vulnerability of the 17 per cent coastal development within 100m of the shoreline
- Social, ecological and economic impacts due to the shifting range of rock lobster and small pelagic fish

Source: (Scholes et al. 2015)

The opportunity

Marine governance

The policy environment of South Africa has its backbone on NEMA (No 107 of 1998. It is the principal platform that all decisions pertaining to SDG 14. Decisions relating to conservation, sustainability of resources, land, degradation, biodiversity and equitable resource use. Under the umbrella framework of NEMA in South Africa several governance systems have been created which include the following below:

Table 1: Overview of the legal framework

Integrated Coastal Management Act (ICM) No 24 of 2008	It is the principal law for the management and governance of coastal environment. Targets 14.1 (management of land-based activities of the coastal zone) and Target 14.2 (application of ecosystems-based approach) are relevant. Management of saltmarshes in estuaries are required by this act.
Biodiversity Act (NEMBA) No. 10 of 2004	Implements the 1997 white Paper and south Africa commitment to the Convection on Biological Diversity (CBD). Through NEMBA, the South Africa National Biodiversity Institute (SABI) is mandated to champion terrestrial and marine biodiversity and management of protected areas. National Biodiversity Strategy and Action plan (NBSAP) 2015-2025. Aiming at Target 14.2 and 14.5 (coastal and marine ecosystems)
National Environmental Management Protected Areas Act (NEMPA) No. 52 of 2003	Aligned to SDG Target 14.5. The conservation of protected areas. Also supports the conservation of soil, water and biodiversity. The Act provides for the protection and conservation of protected areas. Supported by National Integrated Strategy to Combat Wildlife Trafficking (NISCWT): addresses issues illegal, unreported or harvesting of marine resources. Corresponding to Target 14.5 and 14.6
Protected Areas Act	The Act provides for conservation, management, sustainable and equitable use of marine resources.
South Africa National Water Act (Act 36 of 1998)	The ecological conservation of estuaries (and salt marshes therein) before extraction of freshwaters.

Marine protected areas

Marine protected areas are recognized under the Protected Areas Act. An ecosystem is considered protected if it falls within one or more protected areas. South Africa demonstrates dedication to marine conservation. For example, although the Prince Edward Islands Marine Protected Area has very minimal threat from human activity, 12.03 per cent of it is protected. South Africa is on track to expand its effective and representative marine protected area network to the 10% SDG target by the conclusion of the SDGs in 2030.

Table 2: South African Marine Protected Areas as a percentage of the Exclusive Economic Zone

	Area of MPAs km2	Area of EEZ km^2	Percentage in MPA
PEI	180 000	466 879	38.55
Mainland	4540	1 068 659	0.42
Combined	184 540	1 535 538	12.03

Source: (SANBI)

Under the operation Phakisa an additional 20 MPAs are to be added to the South Africa protected area network. This will increase protection of the mainland continental ocean around South Africa from 0.4 to 5 per cent, and the new areas will advance ocean protection by approximately 50 000 km^2 (SANBI, 2018).

This indicator has been supported by a proportion of government funds together with the GERD program. The funds are in support of maintaining and improving the ocean through increase of marine research and technology thus increasing scientific knowledge of marine eco systems.

Fisheries

The challenge

South African waters are rich in fisheries. However, there are challenges managing the resource and if not done properly is likely to impact the fisheries resources and livelihoods of coastal communities.

The situation

Total Fisheries production 578,000 metric tons. The annual growth in capture fisheries has averaged -1 per cent between 2000 and 2015. The annual average growth in aquaculture between 2000 and 2015 was 5.6 per cent. It is estimated that 90 per cent of National Fisheries contribution is derived from the Western Cape Region and this mainly contributes to the economies of the coastal communities. The sector is considered to have contributed an approximate of US $323 million in 2008.

Area	813 220 1 km^2
Shelf area	000 275 km^2
GDP at purchaser's value (2008)	USD 782.7 billion
GDP per head (year)	USD 247 4 at market value
Agricultural GDP (2008)	USD 7.4 billion
Fisheries GDP (2008)	USD 322.5 million

Sources: Stats SA, 2009 (Geography Division) http://www.statssa.gov.za/publications/SAStatistics/SAStatistics2009.pdf; South African National Spatial Biodiversity Assessment 2004: Technical Report. Volume 4: Marine Component. South African National Biodiversity Institute; Council for Geoscience; Mid-year population estimates by Statistics South Africa, 2009 (P03022009) http://www.statssa.gov.za/PublicationsHTML/P03022009/html/P03022009.html

Note: Indicative exchange rate December 2009 US$=Rand 7.5

Table 3: Key fisheries statistics

2007(6)	Production	Imports	Exports	Total Supply	Per caput Supply
		Tons live weight			Kg/per
Fish for direct consumption	396660	121959	144005	374614	7.6
Fish for animal feed and other purposes	276700	41800	123400	195100	

Estimated Employment (2008)	
Primary sector (including aquaculture)	16 853
Secondary sector:	10 876
Gross value of fisheries output -	-
Trade (2008)	-
Value of fisheries imports	USD 233 842 390
Value of fisheries exports:	USD 537 912 911

Source: Fishing Industry handbook, 2007 & 2008(7) http://www.trademap.org

South Africa's fish and marine industry is categorized into three main sectors: industrial, small scale, subsistence and recreational. The holding of rights or permits is a mechanism that was adopted under the Ministry of Agriculture and Fisheries Act to manage the industry. For example in the commercial fishing sectors are managed through total allowable catches (TAC), total allowable efforts (TAE) or a combination of both. Long-term fishing rights are granted for a period of 10 to15 years, which period also puts into perspective of the needs of disadvantaged persons or the minority groups.

Marine subsector

South Africa has an irregular coastline that creates an ecosystem that is habitat to a high variety of different marine species. The diverse species call for different fishing gear for example: hake trawl fishery, small pelagic seine fishery for tuna (anchovy and sardine),offshore trawl, inshore fishery, line fisher sector, recreational line fish, midwater fishery (horse mackerel),tuna poling sector, hake trawl fishery among others.

South Africa has a total of 22 commercial fisheries which are all managed in two ways in total allowable catches (TAC), Total of allowable efforts (TAE) and a combination of the two. Other fisheries are managed total allowable effort only which includes restriction on the number of vessels used or gear, the number of crew members and also the open and closed sea days.

Use of operational Management Procedures (OMPs) theses are agreed procedures between scientists, resource managers and the fishing industries on the issues of resource sustainability. Commercial fisheries are also managed by use of specific conditions for example the millimeters (85mm to110mm stretch mesh that is allowable for trawling) that should be observed

Aquaculture subsector

South Africa's marine based and freshwater sector is growing at great speed due the global demand of species such as the abalone, black mussel, oyster, prawn, Finfish and seaweed. The industry only contribute 4 per cent to the global market, although its volume is low it helps in reduction of the potential pressure on the wild fishes (DAFF 2011). The abalone culture is most important and highly farmed of all fishes in terms of its volume and employment and it is centered around the Hermanus area on the Cape South coast. In 2008, marine production of abalone was (1037 tonnes), mussels (737 tonnes), prawns (11 tonnes), finfish (3 tonnes) and seaweed (1,834 tonnes).

Freshwater culture has not adopted well because of lack of suitable waters for farming however on small scale fish such has as catfish, cray fish, and tilapia are farmed in highlands of South Africa and salmon farmed in Western Cape. However there a drastic decline in freshwater aqua production in the resent years, from a level of 2200 tonnes in 2003 to 1400 tonnes in recent years.

Recreational subsector

South Africa has an extensive coastline so the recreational fishing activities around the coast vary. The activities include spear fishing, sline fishing, boat sking, beaches and estuaries

Food security

Food security coastal communities dependent heavily on Subsistence fish farming, however this has not played a big role in food security in South Africa because of the large community base along the coast hence alternative source of food protein are sourced. Most of the subsistence fishes active on the coastline target and harvest linefish and anchovy (DAFF 2012: Sink et al. 2012). The WWF has classified most traditional fishing communities' country wide as food insecure.

The constraints

Inadequate legislation

Legislation and management framework of managing seagrass beds is lacking in South Africa. There is no specific attention on seagrass, no research to generate data and information abkout the seagrass in the WIO.

Pressure on marine resources

Pressure on ocean resources, developmental trade-offs, competing interests, coordination issues: Address the principle of Marine Spartial Planning (Marine Spartial Planning Bill to be signed into law), co governance and management Marine Spartial Planning between the national government and the local government.

Data availability

Data availability and the impact on medium- and long-term planning processes: lack of data integration and quality management, data gaps inconsistence in the collection and methodologies used by different agenciesand jurisdiction. Despite progress in many countries, there is still a huge gap in the nature of information needed to accurately monitor and report on SDGs (Sanga, 2011).

The opportunity

Employment

There is a significant increase in the employment opportunities in the coastal communities, include subsistence and artisanal fishers although there is no quantification on how many are employed. The Line fish sector among all sectors, employs about 3000 followed by the squid and deep-sea hake sectors as per 2003, comprehensive economic assessment by Rhodes University Economic Sectoral Study, 2003). (In a broader context, DEAT runs an Expanded Public Works Program that was reported to have created 13 1887 job opportunities and 459 permanent jobs in 2006/7).

Government and non-government sector policies

The principal regulatory framework governing fisheries management comprises section 24 of South Africa's Constitution and the Marine Living Resources Act of 1998 (MLRA). The Marine and coastal Management (MCM) is responsible for the emerging issues of fishing rights of commercial and subsistence and general management of the marine and coastal activities. The Marine Living Resources Act (No. 18, 1998) aimed at creation of employment, development of human resource, and achieving economic growth. Other Acts that support the various fisheries sectors include (additional legislative framework). These include the:

- The National Environmental Management: Protected Areas Act (No. 57 of 2003),
- The National Environmental Management: Biodiversity Act (No. 10 of 2004),
- The Maritime Zones Act (No. 15 of 1994), Sea Birds and Seals Protection Act (No. 46 of 1973),
- Sea Shore Act (No. 21 of 1935)
- The Nature and Environmental Conservation Ordinance, (Ordinance 19 of 1974).

Mariculture farming is managed under the Mariculture Policy; while the Experimental Fisheries Policy guides the development of potential new fisheries, such as octopus. A Rights Transfer Policy exists and

aims to allocate rights. In 1994, fisheries policies were developed for all commercial fishing sectors resulting in firstly four-year "medium-term" rights issued between 1998-2004 and thereafter long-term rights for up to 15 years. There is no formal Individual Transferable Quota regime although fishing rights are transferable by specific application and are handled under the Rights Transfer Policy developed in 2009.

In view of the high seas, South Africa also applies to fishing permits especially in relation to conservation measures in CCAMLR and Regional Fisheries Management Orgniasations (RFMOs). South Africa is party to a number of regional fisheries management organization which include:

- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR),
- the International Commission for the Conservation of Atlantic Tunas (ICCAT),
- the South East Atlantic Fisheries Organization (SEAFO),
- the Benguela Current FAO Fisheries and Aquaculture Department Commission (BCC),
- the Southwest Indian Ocean Fisheries Commission (SWIOFC),
- the Southern African Development Community (SADC)
- protocol on Fisheries, and the International Whaling Commission (IWC) (15)
- As a non-contracting participating member of the CCSBT and the IOTC.

In recent years, fisheries management and research has seen increasing participation of the fishing industry and non-government organizations. For example, fishing industry representatives and scientists actively participate and contribute to the Scientific Working Groups as well as the Resource Management Working Groups (RMWG) for each of the main fishery sectors.

Research

On-going fisheries research has helped to predict the availability of fish stocks. For example, research and survey on demersal trawl for hake on both the west and south coasts and two acoustic of small pelagic species and also independent surveys are carried out that help in the assessment of commercial fish stock. Other regional research programs include:

- The Southwest Indian Ocean Fisheries Project (SWIOFP),
- The Benguela Current Commission, the Agulhas Somali Large Marine Ecosystem project (ASCLME) and numerous other smaller regional programmes. There are collaborative surveys and research with the EAF-Nansen programme using the RV Fridtjh of Nansen.
- South Africa has committed to the Implementation of an Ecosystem Approach to Fisheries (EAF) and has a scientific Ecosystem Working Group contributing to the management of most fisheries.
- In addition, there are independent initiatives by NGOs developing a Responsible Fisheries Programme (WWF) as well as a strong collaborative approach to this work that includes a Responsible Fisheries Alliance between major fishing industry players and WWF. Further supporting the EAF approach has been the Marine Stewardship Council (MSC) certification of the hake trawl fishery, the first "African" fishery to be certified (FAO Fisheries and Aquaculture Department).

Education and training

South Africa's management of fisheries has given the disadvantaged an opportunity to develop skills in the fisheries industry. Training and educating programs aim at development of skills and

ecosystem management of marine resources. A number of programs have been sponsored by foreign organization such as the NORAD program supported by Norwegian. There also training systems that are supported and subsidized by Transport Education Training Authority (TETA) (FAO Fisheries and Aquaculture Department).

In South Africa, fisheries management has been having a limited definition of the term subsistence farming hence a lot of small scale and traditional fisheries were marginalized and left out in the decision-making process. However, in 2014, the amendment of the Marine Living Resource Amendment Act (MLRA) Act No. 5 of 2014, paved way for the inclusion of small-scale fisheries and this was implemented through the Small Scale Fisheries Policy (SSPF).

The SSPF addresses the need of integrating small scale fisheries by ensuring the fishing rights are accommodated and rightly managed and these rights are allocated to groups of people rather than individuals.

More so the policy also supports the systems that invest in communities on the relevance of sustainable use of resources without depletion of critical fish stock

The policy further supports investment in community entities to take joint responsibility for sustainably managing the fisheries resources and to address the depletion of critical fisheries stocks.

The MLRA and the SSFP are directly influential in South Africa's progress toward achieving SDG Target 14b in terms of enabling access for small-scale and artisanal fishers to marine resources and markets. Key principles in the policy include community-oriented management, co-management of resources and an allocation of the basket of species. The policy goes further to recognize that the marine sector has not been adequately acknowledged in the past and requires a stronger approach to legally establish the rights of small-scale fisheries. The SSPF also by moving away from individual rights creates a channel where small scale fisheries focuses on human rights, development, and gender hence creating a collective approach with a development goal.

The Government of South Africa through Oceans Economy programme created a result driven approach Operation Phakisa to support its projects in various marine and coastal resources. The programme is driven by the recognition that the ocean's economy has the potential to contribute up to R177 billion to Gross Domestic Product (GDP) by 2033 and create approximately 1 million jobs (Operation Phakisa, 2017). The operation which commenced 2014 has enabled government to unlocked investments amounting to approximately R24 billion and has created over 6 517 jobs in various sectors (Operation Phakisa, 2017).

The Operation Phakisa programme is structured in six workstreams or 'labs' that are located across government directorates, ensuring a wide representation of national government within the labs' responsible agencies (Oceans Economy 2017 Summary Report) (Operation Phakisa, 2017). The Marine Transport and Manufacturing Lab, links to Target 14.4 and Target 14.5 of the SDGs as follows:

- The Offshore Oil and Gas Lab,
- The Aquaculture Lab, linking to Target 14.7
- The Marine Protection Services and Ocean Governance Lab,

- The Coastal and Marine Tourism Lab, is directly linked to Target 14.6 Target 14B followed by Target 14.2.
- Small harbors and Coastal Development, linked to Target 14B and Target 14.2

The proportion of research allocated to marine sciences has declined over the years from 0.58 per cent in 2010/11 to 0.52 (2013/14) before increasing again to 0.765 per cent in 2016/17. Marine science as a proportion of total GERD was 0.26 per cent in 2010/11, 0.2 per cent in 2013/41, and 0.35 per cent in 2016/17.

One of the main projects supporting the decision making and effective governance of marine resources, oceans and coast is the The National Oceans and Coastal Information Management System (OCIMS) which may help report on: (1)Target 14.1 relating to eutrophication in coastal waters: (2) Target 14.3 relating to ocean acidification: (3) Target 14.4 relating to fish stocks: and (4) Target 14.7 relating to the economic performance of markets based on marine resources and activities is enhanced. Also South African Data Centre for Oceanography (SADCO) soon to be integrated into the Marine Information Management System (MIMS) will greatly support the decision making process.

The data collection can also be done through public awareness and education campaigns through a 'citizen science'.

Hotspots

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Western Indian Ocean Large Marine Ecosystems Strategic Action Programme Policy Harmonisation and Institutional Reforms (SAPPHIRE)