

THE SOUTH AFRICAN

OCEANS ECONOMY

Master Plan to 2035



DRAFT NUMBER 5

Towards a Sustainable Oceans Economy



REPUBLIC OF SOUTH AFRICA





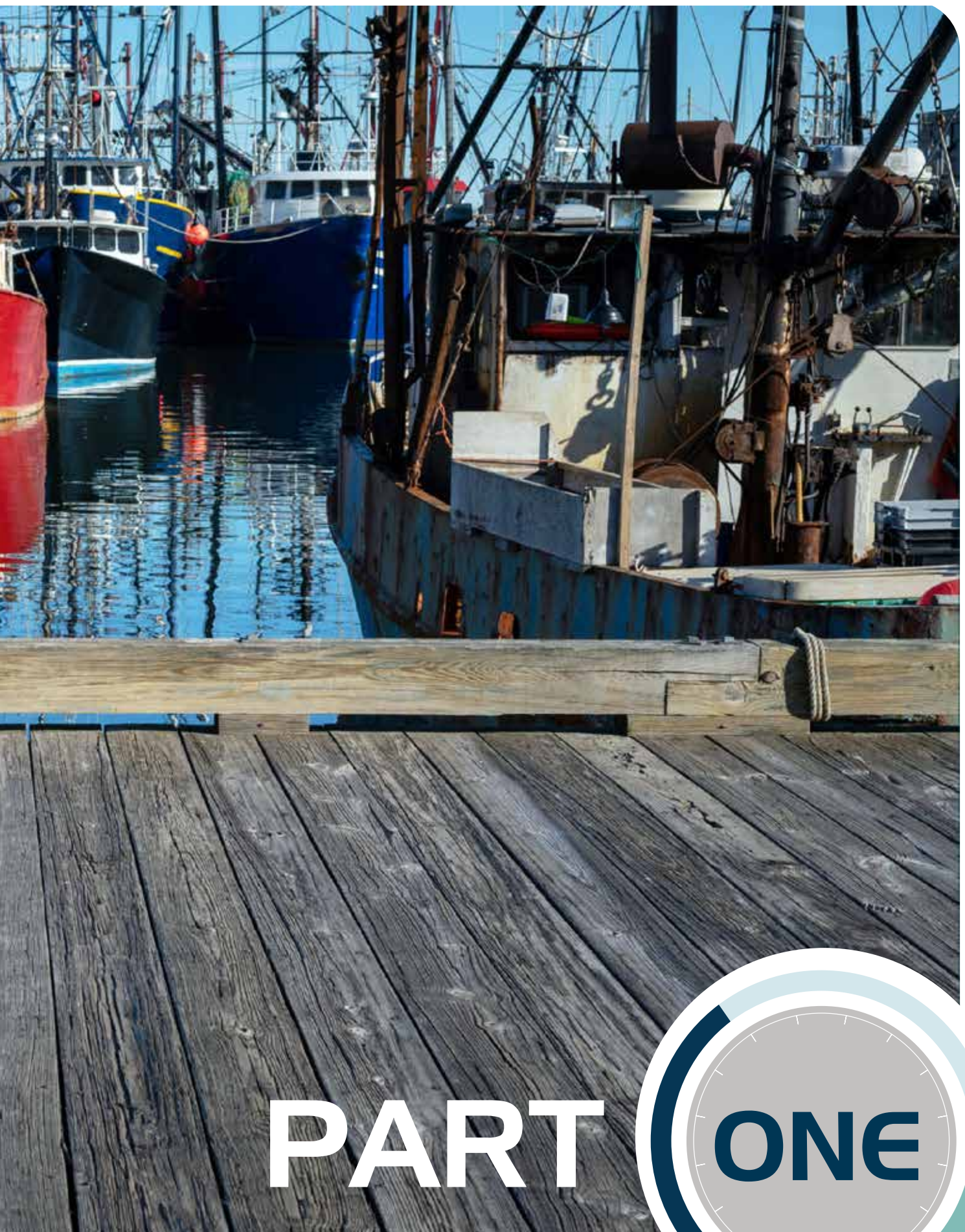
Towards a Sustainable Oceans Economy

The Oceans Economy Master Plan

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PART

ONE

1. Introduction

The ocean is central to South Africa's economy. With around 40% of the population living within 60km of the coast,¹ and over 90% of all trade having a maritime element, South Africa has been described as a 'maritime economy'.² South Africa is strategically located on one of the world's major shipping routes, critical to global marine transportation. It also has the second longest coastline in Africa, influenced by three oceans, namely the Atlantic, Indian and Southern oceans. Furthermore, its rich and productive coastal waters support thousands of jobs across various ocean-based industries and contribute billions of Rand to the national economy each year. A recent study captured the breadth of social and economic benefits of the oceans economy to South Africa, finding that it accounted for 4.47% of the country's total Gross Domestic Product (GDP) and 2.86% of total employment in 2020.³

Despite the overwhelmingly maritime nature of South Africa's geography, its clear dependence on the ocean, and the contribution of the marine sector to the overall national economy, South Africa requires continuous interventions to maximise the sector's potential. At a national policy level, it has been heavily supported by Government in the form of the Operation Phakisa-Oceans Economy initiative, which was launched in 2014. The initiative has focused on unlocking the potential of several priority areas within South Africa's broader ocean economy, with the sector estimated to potentially contribute between ZAR129 and ZAR177 billion to the national economy and creating between 800 000 to 1 million direct jobs by 2033.⁴ To date, the implementation of Operation Phakisa-Oceans Economy has had varying successes and impacts, and while a key impact has been to place the Oceans Economy on the country's strategic agenda and direct focus to unlocking the economic potential of South Africa's oceans, further work is required to promote inclusive and sustainable growth and job creation within ocean-based sectors.

Growing the economy and jobs is a key priority for South Africa. Operation Vulindlela which is a joint initiative of the Presidency and National Treasury aims to accelerate the implementation of structural

¹ Rochelle Wigley, 2011. *Geohazards in coastal areas*, Council for Geoscience, Western Cape Unit, 2011.

² Timothy Walker, 2018. 'Securing a sustainable oceans economy South Africa's approach', *Institute for Security Studies (ISS)*, June 2018.

³ Derek Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa: A Baseline Assessment & Forecast*, study commissioned by Department of Forestry, Fisheries and Environment (DFFE).

⁴ DFFE, 2016. *Operation Phakisa Oceans Economy Progress Report*, Department of Forestry, Fisheries and Environment (DFFE).

reforms and support economic recovery and to fundamentally change South Africa's economic trajectory. The South African oceans economy sector faces several structural challenges in realising its full potential, including infrastructure inefficiencies, limited private sector involvement and procurement bottlenecks, while simultaneously dealing with a struggling national economy and depressed regional markets. However, at the same time, the sector exhibits substantial growth potential. Forecasts for 2035 for the total oceans sectors, in terms of the Standard International Classification (SIC), suggest a GDP contribution of around 4.54% (ZAR166,6 billion) and approximately 608 253 potential jobs (representing 2.9% percent of total employment), which can result in significant economic multipliers along the value chain within the South African economy.⁵

It is within this context that the Department of Forestry, Fisheries and the Environment (DFFE) commissioned the drafting of a South African Oceans Economy Masterplan to further unlock the development of the sector and its ocean-based industries. The drafting of the document was guided by the Master Plan Framework, as outlined by the Department of Trade, Industry and Competition (the dtic). The Oceans Economy Master Plan is an intentionally aspirational plan developed and co-created with stakeholders that seeks to stabilise, revive and grow key sub-sectors of South Africa's Oceans Economy through to 2035. Compared to other sectors in the national economy, the oceans economy sector is complex and diverse, and is also represented by a cluster of industries – each one with their own unique dynamics and opportunities ⁶ – ranging from marine transport and manufacturing, fishing and aquaculture (farming), defence and sea rescue, policing and customs, marine and coastal management, and marine tourism to research and education, pharmacology, communication, construction, desalination, science and technology and renewable energy generation – building on the initiatives of Operation Phakisa-Oceans Economy, this Master Plan specifically focuses on five sub-sectors. These are:

1. Marine Manufacturing and Repairs;
2. Marine Transport (including Freight, Logistics and Cargo);
3. Aquaculture (Freshwater and Marine);
4. Fisheries (Small-scale and Commercial); and
5. Offshore Oil and Gas (Exploration).

⁵ Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa*.

⁶ The United Nations Conference on Trade and Development (UNCTAD) has identified at least 13 sectors and 52 sub-sectors within the global oceans economy, consisting of over 780 ocean-based industries. See: UNCTAD, 2021, *Advancing the Potential of Sustainable Ocean-Based Economies: Trade Trends, Market Drivers and Market Access: A First Assessment*.

The development of the Master Plan entailed dedicated Working Sessions and engagements with the respective stakeholders, which include organised labour, business (industry), civil society (community-based co-operatives), National Economic Development and Labour Council (NEDLAC) community constituencies,⁷ academic institutions, and Government and its State-owned entities.

1.1 Purpose of the Master Plan

A cornerstone of industrial policy efforts since 2019 is the development of sector-focused Master Plans in priority sectors, of which the oceans economy is one. A Master Plan is a comprehensive and clear plan of action developed by Government, Business and Organised Labour, which seeks to achieve a common policy objective, such as job creation and economic growth. It is typically time-bound and incorporates various actions by stakeholders, sequenced to achieve maximum socio-economic impact. The primary objective of this Oceans Economy Master Plan process is to develop an agreed-upon set of actions, with timeframes, that stakeholders in key sub-sectors of South Africa's oceans economy commit to implementing for the benefit of the marine sector. The key objectives of this Master Plan are to encourage sector growth, investment, job creation and also enhance competitiveness within South Africa's ocean's economy. These objectives are directly in support for inclusive growth and job creation outlined as a main priority for government in delivering the vision of the National Development Plan. Driving the implementation of sector master plans is a priority in the Growth and Inclusion Strategy (GAIN) for reviving growth and creating jobs in South Africa.

1.2 Scope of the Master Plan

South Africa's oceans economy involves multiple, diverse and sometimes overlapping industries that operate (directly or indirectly) within the marine environment. Hence, this Master Plan includes separate, but mutually reinforcing, sub-sector plans that collectively form South Africa's Oceans Economy Master Plan. The Oceans Economy Master Plan is presented in two parts. Part 1 provides a general overview of the global and South Africa's oceans economy and presents the core tenets of the Oceans Economy Master Plan, including the vision and associated objectives, strategic outcomes and pillars for the South African oceans economy, as well as the pillars and foundations that are intended to frame the development of the sector for the next five years while also taking a longer term view. Part 2 introduces individual plans for the five identified oceans economy sub-sectors, which are intended to give life to the

⁷ Nedlac is the National Economic Development and Labour Council, a statutory body that seeks to ensure effective public participation in the labour market and socio-economic policy and legislation, and to facilitate consensus and cooperation between Government, labour, business and the community in dealing with South Africa's main socio-economic challenges.

aspirational vision, objectives and strategic framework agreed upon by stakeholders to optimally develop the South African oceans economy through to 2035⁸.

2. Review of Global Oceans Economy

The ocean economy is noted as a powerful engine of global economic growth, generating employment, supporting sustainable development, and contributing to the food security and livelihoods of millions of people worldwide⁹.

Global interest in developing ocean economies is taking increasing importance in the policy and economic realm. This resource, if responsibly managed, promises to provide sustainable solutions to many of the pressing issues facing humankind today, including poverty, inequality, unemployment, economic development, and the impact of climate change.

The underlying link between the oceans, economic activity and human survival was underlined by a 2015 United Nations (UN) report, which explains that:

- The ocean covers more than 70% of the Earth's surface;
- More than 60% of the world's population lives on or near the coast;
- More than 3 billion people rely on the oceans for their livelihoods;
- Fish provide 4.3 billion people with at least 15% of their intake of animal protein; and
- At least 90% of the volume of global trade is seaborne.¹⁰

The fundamental drivers of the global oceans economy are fishing, shipping (both in trade and manufacturing), and tourism, with more than 350 million jobs linked to oceans worldwide.¹¹ The importance of the ocean economy for the global economy is also evident in that the ocean economy enables the transportation of over 80% of global goods, and hosts sea cables carrying 98% of

⁸ It is worth noting that, while environmental issues impacting each of the five sub-sectors are highlighted in the masterplan, while recognising the need to balance economic growth and environmental protection in South Africa, the broader issue of potential conflict falls beyond the scope of the document. As such, key issues on climate change, such as equity (including inter- and intra-generational equity) and the precautionary principle are not discussed in any detail.

⁹ OECD Report: The Ocean Economy to 2050

¹⁰ Julie Ritz, 2015. 'The Oceans, Seas, Marine Resources and Human Well-being Nexus', in: United Nations, 2015. *Global Sustainable Development Report: 2015 Edition*.

¹¹ Ritz, 2015. 'Chapter 3: The Oceans, Seas, Marine Resources and Human Well-being Nexus'.

international Internet traffic (OECD Report: The Ocean Economy to 2050). It is important to also acknowledge significant economic activity in upstream petroleum subsector in regions with significant resources and mature oil and gas industry. Yet, despite holding the promise of immense resource wealth and economic growth, there is no standard definition of the concept of an ‘oceans economy’,¹² mainly because marine activities vary from one geographic location to the next, however this area is increasingly gaining attention given the importance of the ocean itself and ocean economic development.¹³ For the purposes of this Master Plan, the following definition is used:

“The ocean sector (economy) is one that includes all economic activities closely linked to the ocean resources and environment and/or dependent to some meaningful degree on the ocean”.¹⁴

Aside from the lack of a standard definition, the United Nations Conference on Trade and Development (UNCTAD) also reports that there are significant data gaps on ocean-based industries worldwide, including on the size and trends of the global oceans economy, market access, challenges and opportunities, and on the supply side. Moreover, even less is known about the inter-connectivity between trade and the various sub-sectors of the oceans economy – as well as the impact of these sub-sectors on oceans eco-systems.

Despite this data gap, a review of international research suggests that general trends on ocean-based industries can be reliably identified.

A report by the World Wildlife Foundation (WWF) placed this figure a bit lower at around USD2.5 trillion (ZAR40 billion), adding however that the ocean drew on assets worth at least USD24 trillion (ZAR390 trillion). As shown in Figure 1 below, these key ocean-based assets include: direct outputs from the ocean (USD6.9 trillion or ZAR112 trillion); trade and transport (USD5.2 trillion or ZAR84 trillion); and adjacent assets (USD12,1 trillion or ZAR196 trillion).¹⁵

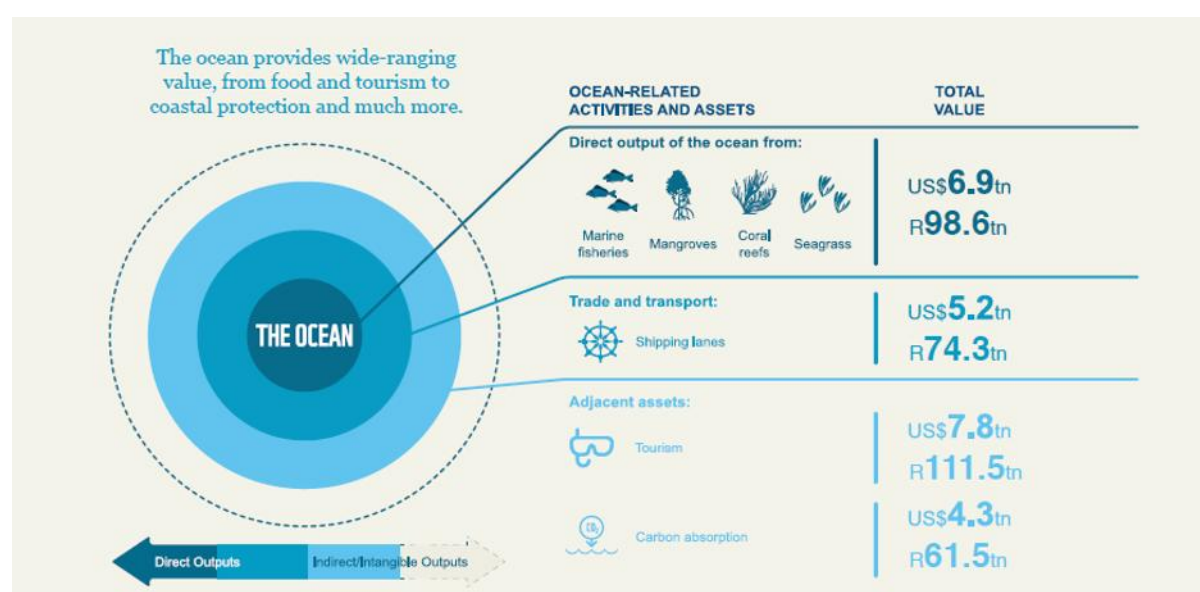
¹² The term oceans economy is often used interchangeably with the term ‘blue economy’, although the latter is cited mostly when related to the sustainable use of the oceans. Both concepts continue to change and adapt.

¹³ Province of the Eastern Cape, 2020. *Oceans Economy in the Eastern Cape and South Africa: A status quo and baseline assessment*.

¹⁴ Hosking, S., 2017. *Progress overview on the contribution of the South African Ocean Sector*, Cape Peninsula University of Technology (CPUT).

¹⁵ Hoegh-Guldberg, O. et al, 2015. *Reviving the Ocean Economy: the case for action – 2015*, WWF International, Gland, Switzerland., Geneva.

Figure 1: Global Ocean Asset Value: 2015



Source: WWF, 2015: Reviving the Ocean Economy)

A 2025 UNCTAD Global Trade Update report on Sustainable Ocean Economy highlighted that the ocean economy offers critical opportunities to enhance food security, value addition, connectivity and economic diversification. Global ocean trade is estimated to have reached \$2.2 trillion – \$1.3 trillion in services and \$900 billion in goods in 2023, making up an estimated 7% of world trade¹⁶.

The Organisation for Economic Co-operation and Development (OECD) publication *The Ocean Economy to 2050* estimated that the global ocean economy's output in doubled in real terms in 25 years from USD 1.3 trillion of GVA in 1995 to USD 2.6 trillion in 2020, growing at an annual average rate of 2.8%. From 1995 to 2020, the ocean economy contribution was estimated as 3% to 4% of global gross value added (GVA). The publication highlighted that COVID-19 impacted employment levels, which was at a peak of 151 million Full Time Equivalents (FTEs) in 2006, falling to 101 million in 2020, with recovery since then.

In terms of future economic outlook, the OECD's *The Ocean Economy to 2030* report projected a marked acceleration in a range of ocean economic sub-sectors by 2030 – particularly aquaculture, fisheries, marine fish processing, offshore wind power and port activities.¹⁷ The latest publication denotes that global forces and factors such as population growth, climate change and other environmental pressures,

¹⁶ UNCTAD Global Trade Update (June 2025): Sustainable ocean economy

¹⁷ OECD), 2016. *The Ocean Economy in 2030*, Organisation for Economic Co-operation and Development (OECD) Publishing, Paris.

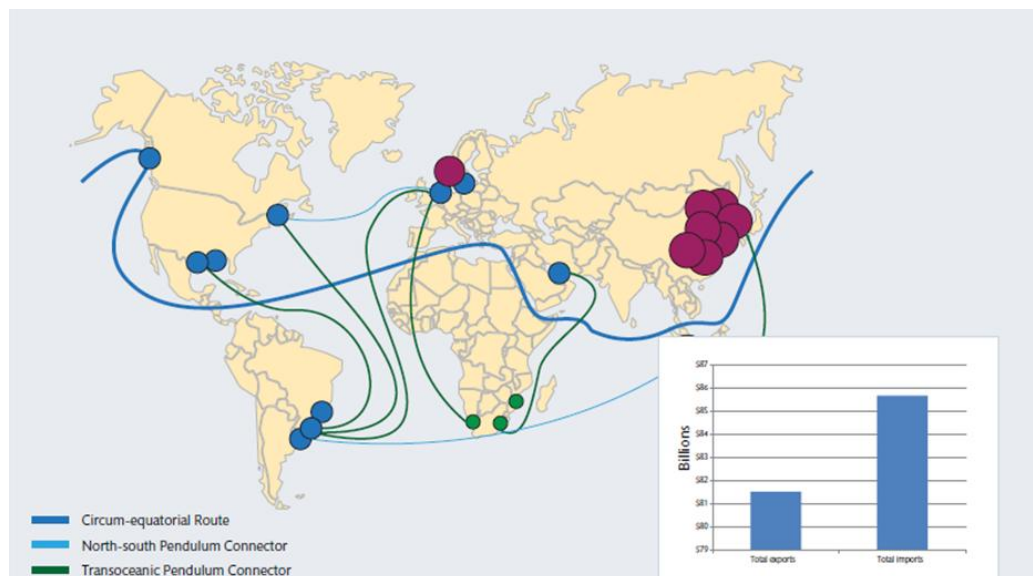
trade and globalisation, the energy transition, technological advances, and geopolitical dynamics will influence ocean health and reshape the ocean economy in coming decades.

3. Review of South Africa's Oceans Economy

3.1 Overview

The South African oceans economy has followed the global trend by assuming increasing importance. South Africa's strategic location at the most southerly point of Africa means it is influenced by three oceans – the Atlantic Ocean to the west, the Indian Ocean to the east, and the Southern Ocean to the south. This places South Africa at a strategic point along one of the world's major shipping routes,¹⁸ mainly the South-South trade corridor from Asia to the East Coast of South America and the connector routes along the East and West coasts of Africa (see Figure 2 below).¹⁹

Figure 2: South Africa's strategic location in relation to international shipping routes



(Source: Invest SA, 2016, South Africa's Ocean Economy)

South Africa has a coastline of some 3,600 km, including its two sub-Antarctic islands (Marion Island and Prince Edward Island),²⁰ and has an Exclusive Economic Zone (EEZ) of 1.5 million km² (see Figure 3 below), an area which exceeds its total land territory of approximately 1,2 million km². The EEZ is the site of considerable sea traffic and activity, with an estimated 30 000 vessels sailing through South African

¹⁸ Walker, 2018. 'Securing a sustainable oceans economy South Africa's approach'.

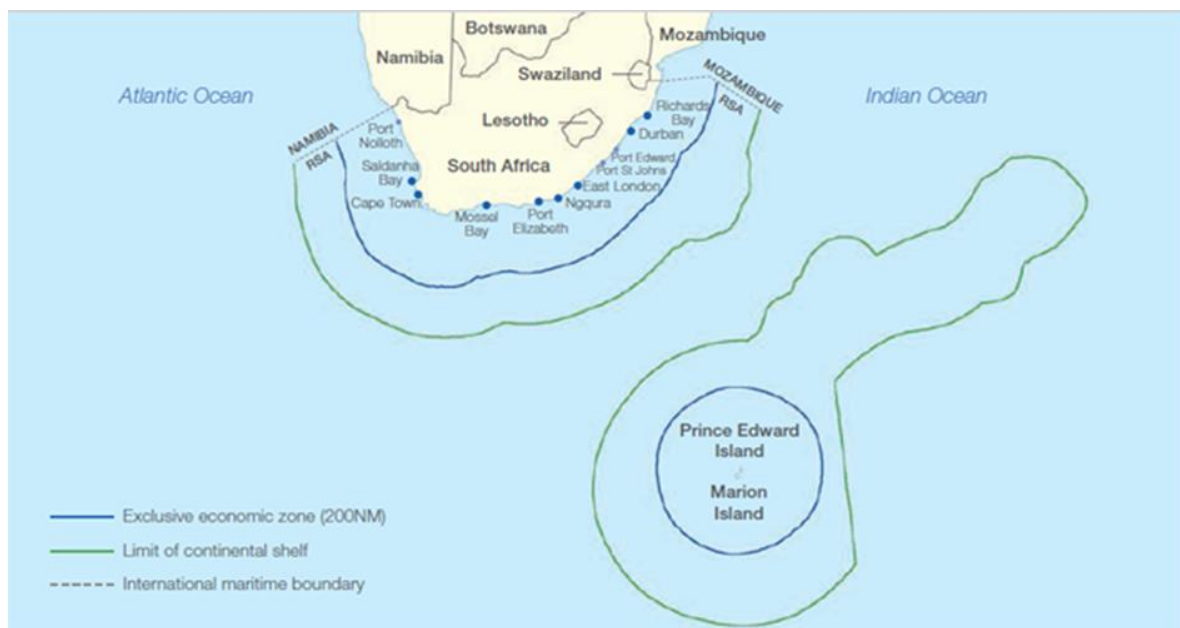
¹⁹ Invest SA, 2021. *South Africa's Ocean Economy*, accessed 12 November 2021, available at: <https://www.gov.za/sites/default/files/gcis_document/201706/saoceaneconomya.pdf>

²⁰ The two islands, located around halfway to Antarctica, are Marion Island and Prince Edward Island in the Southern Ocean.

waters annually. The ocean area is governed in terms of South Africa's Maritime Zones Act of 1994 and the United Nations Convention on the Law of the Sea (UNCLOS), agreed to in 1982.²¹ These regulations grant South Africa the rights to develop and sustainably utilise marine resources and associated resources contained within the EEZ and its oceans economy.²² South Africa's Constitution also makes provision for the protection, conservation and sustainable use of the environment, including the oceans.

The area is rich in biodiversity and other natural resources, which provides opportunities for economic growth and development.²³ The oceans economy also sustains and facilitates a wide range of industries and economic activities, including: shipping transport, recreation, fishing, defence and sea rescue, policing and customs, marine and coastal management, coastal and marine tourism, research and education, and also mining, communication, construction, desalination, aquaculture, pharmacology, science and technology and renewable energy generation.²⁴

Figure 3: South Africa's main ports and extended EEZ



(Source: Walker, 2018: Securing a sustainable oceans economy South Africa's approach)

²¹ Stephen Hosking et al, 2014. 'The Economic Contribution of the Ocean Sector in South Africa', *Studies in Economics and Econometrics*, 38:2.

²² Walker, 2018. 'Securing a sustainable oceans economy South Africa's approach'.

²³ Griffiths, C. L., Robinson, T. B., Lange, L., and Mead, A, 2010. 'Marine biodiversity in South Africa: an evaluation of current states of knowledge', *Plos One*.

²⁴ Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa*.

In order to unlock the economic potential of South Africa's oceans economy (as well as other sectors), Cabinet in 2014 approved the piloting of the Malaysian Big Fast Results (BFR) methodology. The initiative, known as Operation Phakisa-Oceans Economy, was designed to fast-track the implementation of the objectives of the 2030 National Development Plan (NDP), such as eradicating poverty, unemployment and inequality.²⁵ Among other identified economic sectors, including health, agriculture, and ICT in education, Operation Phakisa-Ocean Economy served as an operational outlet to optimise the economic potential of the country's oceans as a natural resource.²⁶ The planning phase of the initiative took place in mid-2014 (which was first led by the then Department of Environment), and saw Government gather over 600 South African maritime stakeholders and experts from 68 institutions together for a series of working sessions (or 'Delivery Laboratories') to interrogate the South African maritime sector and identify areas with the greatest economic growth and employment potential. Six (6) priority areas and (2) two cross-cutting themes were identified, namely:

1. Marine transport and manufacturing;
2. Offshore oil and gas exploration;
3. Fishing and aquaculture;
4. Marine protection services and ocean governance;
5. Small harbour development;
6. Coastal and marine tourism;
7. Skills and capacity building (cross-cutting); and
8. Research, technology and innovation (cross-cutting).²⁷

Although only a few of the abovementioned areas have been interrogated in some detail since the launch of Operation Phakisa-Oceans Economy, a comprehensive economic analysis on behalf of the Department of Forestry, Fisheries and the Environment (DPPE) was conducted in 2021 on nine (9) Phakisa sub-sectors which were deemed to be in need of attention as of 2014.²⁸ These are:

1. Marine Transport and Manufacturing;
2. Tourism;
3. Offshore Oil and Gas;

²⁵ Operation Phakisa website: <<https://www.operationphakisa.gov.za>>, accessed 16 November 2021.

²⁶ François Vreÿ, 2019. 'Operation Phakisa: reflections upon an ambitious maritime-led government initiative', *Scientia Militaria*, 47:2 (2019).

²⁷ DPME, *Operation Phakisa*, Department of Planning, Monitoring and Evaluation, accessed 13 December 2021, available at: <<https://www.operationphakisa.gov.za>>

²⁸ It is important to note that these sub-sectors are not necessarily deemed to be fully representative of the total ocean economy in South Africa.

4. Construction and Real Estate;
5. Renewable Energy;
6. Fisheries and Aquaculture;
7. Communication;
8. Desalination; and
9. Other.²⁹

The analysis estimated that Operation Phakisa-Oceans Economy had the potential to contribute between ZAR129 to ZAR177 billion to South Africa's GDP by 2033 (compared to ZAR54 billion in 2010) and create between 800 000 and 1 million jobs (compared to 316 000 in 2010). The medium-term forecasts suggested that the country's GDP could grow by an additional ZAR20 billion, with an additional 22 000 direct new jobs potentially created by 2019. It is worth noting that this analysis was conducted with specific assumptions and when the global and local economy was at a particular growth trajectory.³⁰

The implementation phase of Phakisa Oceans Economy has now been running several years with modest economic results, with the initiative having varied success across the six (6) priority areas - Marine Transport and Manufacturing (Department of Transport), Offshore Oil and Gas (Department of Minerals and Petroleum Resources), Aquaculture and Marine Protection and Ocean Governance (Department of Forestry, Fisheries and the Environment), Coastal and Marine Tourism (National Department of Tourism) and Small Harbours Development (Department of Public Works and Infrastructure). The Ocean economy programme implemented since 2014 demonstrated that the oceans economy has the potential to unlock billions of rands in investment and create hundreds of thousands of jobs. Progress includes reinvigorating coastal infrastructure, strengthening marine protection and ocean governance, attracting investors, delivery of major infrastructure upgrades for the maintenance and upgrade of existing ship repair facilities at the ports and promoting new industries like aquaculture. The impact across these areas is estimated at ZAR153 billion in turnover (total production), ZAR41 billion to the GDP (with ZAR41 billion investments) and 48 506 jobs in 2020.³¹ Some of the major challenges that have impacted Phakisa's progress include:

²⁹ See: Zimmerman, 2021. *The Oceans Economy of South Africa & Operation Phakisa*. The study indicates that an exact fit of *Operation Phakisa-Oceans Economy* sub-sectors was not possible due to different ocean sectors being acknowledged and measured. An additional ninth sub-sector, which includes the two cross-cutting themes of Skills and Training and Research and Development and Innovation, together with the Marine Protection Services and Ocean Governance and Small Boat Harbour Development sub-sectors, was accommodated under the differential 'Other'.

³⁰ These assumptions include an assumed real GDP growth of 1.8% and expecting nominal GDP growth of around 7%. These figures were informed by National Treasury and South African Reserve Bank forecasts for economic growth and inflation figures at that time.

³¹ Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa*.

- Depressed global and local economic climate;
- Global trade growth and commodity prices under downward pressure;
- Low oil prices impacting negatively on the oil and gas sector;
- Slowdown in investments especially from the private sector;
- Government slipping back to ‘business-as usual’; and
- Red tape and bottlenecks in procurement processes.

While South Africa’s oceans economy is comparatively small globally, it makes a substantial macroeconomic contribution to the South African economy. According to the abovementioned 2021 DFFE study, the sector’s full contribution to GDP (‘Total Ocean Economy Sectors³²’) was estimated at 4.47% and employment at 2.86% in 2020.

The direct contribution to GDP, however, has remained somewhat stagnant over the last decade, recording an average of 4.4% to GDP from 2010 to 2020 (valued at between ZAR110 and ZAR117 billion).³³ At the same time, the oceans economy sector exhibits substantial potential. Projections for 2025, assuming there is sustained growth, forecast a slight increase in the GDP contribution, in Rands, of the Total Oceans Economy Sectors at 4.39% (valued at ZAR130,7 billion), translating to 480 440 jobs (2.85% of total jobs) in South Africa (figures based on the Standard International Classification, using StatsSA and Quantec data). Forecasts for 2035 (using the same data and methodology) suggest a GDP contribution of around 4.5% (ZAR166,6 billion) and 608 253 jobs (2.9% of total jobs), which can potentially result in significant economic impacts along the value chain within the broader South African economy (see Table 2 below).³⁴

Table 2: Forecasted GDP Growth and Job Creation in the Oceans Economy, 2022-2040

Contribution	2022	2024	2025	2030	2035	2040
	(Rand in Billions)	(Rands in Billions)	(Rands in Billions)	(Rands in Billions)	(Rands in Billions)	(Rands in Billions)

³² The term ‘Total Oceans Economy Sectors’ is used to express South Africa’s oceans economy as a sub-set, or secondary economy, within the National Accounts Framework, which is typically measured and analysed in terms of GDP. This is similar to the ‘Satellite Accounts’ methodologies used for other second tier economies, such as tourism and education.

³³ DFFE, 2020. *Operation Phakisa Progress Report*; and: Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa* (Table 32).

³⁴ Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa* (Table 26).

GDP	R125	R129	R131	R147	R167	R194
Jobs	457 694	471 907	480 440	539 520	608 253	702 216

(Source: Zimmerman, 2021: The Ocean Economy of South Africa & Operation Phakisa)

Marine transport and manufacturing are expected to be the largest contributors to economic growth in the form of GDP by 2035, with fisheries and aquaculture potentially the largest contributor to job creation, if construction is excluded. More specifically, it is estimated that marine transport could contribute around ZAR11 billion to GDP and up to 19 000 jobs by 2035, primarily driven by growth in cargo handling, with container volumes projected to increase by 6% per annum. Marine manufacturing is expected to contribute over ZAR10 billion to GDP and around 29 000 jobs in 2035, mainly driven by repairs and refurbishment that could contribute approximately 6% growth in both GDP and job creation. Projections for fisheries and aquaculture suggest a combined GDP contribution of ZAR 4.8 billion and potential jobs at over 56 000 by 2035, while offshore oil and gas is forecasted to contribute around ZAR5 billion to GDP and create around 10 000 jobs by 2035.³⁵

At the back of the global economic climate following the COVID-19 pandemic, together with the current state of the South African economy, there is a need to re-assess these projections. The commencement of the national lockdown in March 2020 saw significant changes in South African marine-based industries. With the decline of global trade, particularly the demand for goods from China, it is estimated that port operations operated at 60% capacity in 2020. This, in turn, dropped demand across other sub-sectors of the oceans economy, particularly in shipping, aquaculture, offshore oil and gas, (which has also been impacted by a drop in oil prices), and tourism – this therefore adversely affected jobs numbers.

It is important to note that the South African oceans economy is supported by a world-class maritime skills development and capacity building framework. Firstly, the South African International Maritime Institute (SAIMI) was established in 2015 in response to demand from the maritime sector to coordinate maritime skills development, training, education and research, as well as to support the implementation of skills development – of which the National Cadet Programme (NCP) is one of the initiatives. The NCP, which was originally launched by the South African Maritime Safety Authority (SAMSAs) in 2010 and supported by the Department of Higher Education and Training (DHET), the Department of Transport (DoT) and the Transport, Education and Training Authority (TETA) has since 2011 added more than 600

³⁵ Zimmerman, 2021. *The Ocean Economy of South Africa & Operation Phakisa* (Table 26); and: Province of the Eastern Cape, 2020. *Oceans Economy in the Eastern Cape and South Africa* (Tables 4 and 5).

seafaring officers to South Africa's maritime skills base, with a reported 90% success rate for employment with local and international shipping lines. Examples of vocational training in the maritime sector include port operations, freight and logistics, vessel operations and vessel construction among others. Secondly, South Africa also offers world-class education, training and certification for seafarers, ranging from high school subjects to university qualifications in the fields of maritime/nautical studies, maritime economics, maritime law, maritime civil engineering, oceanography, petroleum geoscience, oil and gas engineering, marine engineering, and customs and excise. In 2019, South Africa had approximately 5,000 seafarers compared to 3,500 in 2015.

The country's oceans economy is also underpinned by research, technology and innovation as a cross-cutting strategy across the respective sub-sectors. Dedicated research, coupled with technological advances provide innovative solutions to support various initiatives within the oceans economy, including developing technologies that can meet the challenges brought about by the green evolution and activate labour productivity improvements, which have a direct impact on localisation and economic growth.

The levels of transformation across the sub-sectors of South Africa's oceans economy varies and continued efforts are required to ensure meaningful transformation of the maritime sector, which includes the empowerment of women, young people, people with disabilities and Small, Medium and Micro Enterprises (SMMEs).

The Oceans Economy Master Plan research suggests that South African ocean-based industries face several challenges. The domestic oceans economy remains relatively small compared to the global oceans economy, with relatively small shipbuilding and repair plants, an underdeveloped marine components industry relative to competitors, and a nascent upstream oil and gas industry. In this regard, a comprehensive sub-sector SWOT analysis completed with stakeholders, as part of drafting the Master Plan, revealed some of the critical underlying challenges facing South Africa's oceans economy. Major existing weaknesses and threats were noted, including unfavourable policy and legal frameworks, red tape and cumbersome and protracted procurement processes, lack of transformation data and monitoring, and ageing and unmaintained infrastructure. The identified weaknesses and threats were not viewed as debilitating to the future success of the oceans economy, however. Many existing strengths and future opportunities were also highlighted. For example, the sector's strengths were recorded as abundance of natural resources, strategic location, large industries and manufacturing, service offerings, research skills, and environmental sustainability. Major opportunities identified ranged from investment

in cleaner and renewable energy, expanding and upgrading of existing infrastructure, to building on current skills and re-skilling.

The large number of opportunities identified reveals the extent of the potential for the long-term development of the South African oceans economy. The sector has the potential to support the growth and development of various oceans-based industries, uplift the socio-economic conditions of oceans economy communities, generate decent and secure work, and ensure industry-owned transformation – as well as impact in the South African economy more generally. While this Master Plan has prioritised five key ocean economy sub-sectors to unlock investment and drive job creation, implementation continues across the broader ocean economy programme. Priority areas such as marine protection and ocean governance, small harbours development, and coastal and marine tourism remain central to building an integrated, inclusive and sustainable ocean economy. These cross-cutting areas intersect with the other sub-sectors of the ocean economy and provide the enabling environment that supports growth across all sub-sectors by strengthening governance to ensure the sustainable use of ocean resources, improving infrastructure and access, enhancing investment readiness, and ensuring that the benefits of the ocean economy are broadly shared.

3.2 Ocean Economy and Small Harbours in South Africa

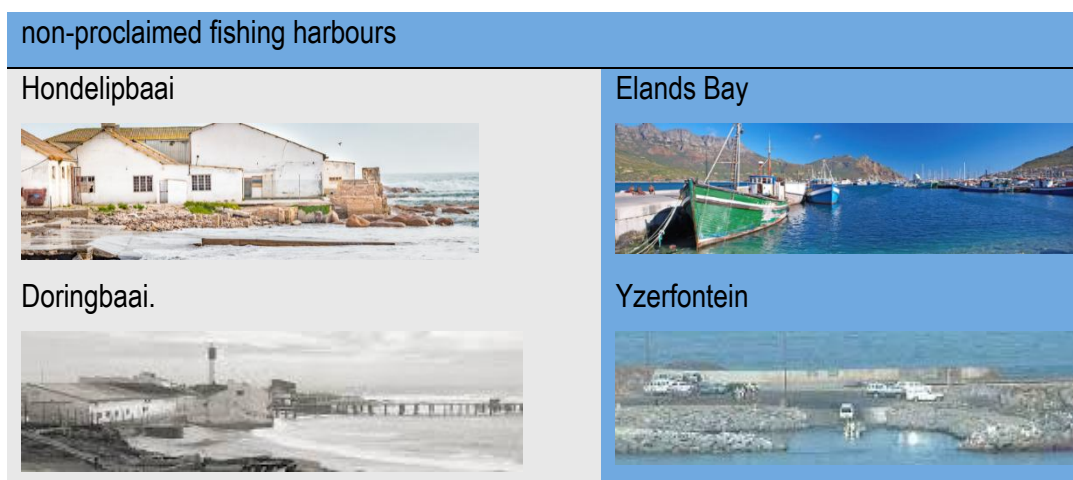
Small Harbours run along the coastal water-land border interface primarily support the near-shore and offshore industries of fishing, aquaculture and other maritime economic activities. As an integral sector in the Oceans Economy, small harbours have been identified as catalytic assets for unlocking local economic development, enhancing spatial equity, and supporting the national ocean economy agenda.

There are four coastal provinces in South Africa namely: Northern Cape (NC), KwaZulu-Natal (KZN), Eastern Cape (EC) and the Western Cape (WC) provinces which have areas along the coast used for different purposes such as jetties or launching sites but these were never developed to the level of full-fledged functional public Small Harbours except in the WC which has 12 Proclaimed Fishing Harbours. A dedicated Mini Lab on Small Harbours was convened in 2018 under Operation Phakisa to define a structured, multi-pronged approach for harbour development, revitalisation, and governance reform. To operationalise this vision, the Department of Public Works and Infrastructure (DPWI) established the Small Harbours Development Unit (SHDU), which serves as the implementation hub for the Small Harbours. The Department of Forestry, Fisheries and the Environment (DFFE) is primarily responsible for the day-to-day fisheries related operations in the 12 Proclaimed Fishing Harbours.

The thirteen fishing harbours that had been proclaimed are Lamberts Bay, St Helena Bay, Laaiplek, Pepper Bay, Saldanha Bay, Hout Bay, Kalk Bay, Gordons Bay, Hermanus, Gans Bay, Struis Bay, Arniston, and Still Bay. With the evolution of nature and changing human activities and preferences, some of these harbours have transformed into multi-use facilities, supporting a range of industries and activities.



There are a few of these small harbours which were not proclaimed and therefore provide potential for multi-use. The non-proclaimed fishing harbours are inclusive of Hondeklipbaai, Doringbaai, Elandsbaai, and Yzerfontein. Whilst the port of Port Nolloth provides for small-scale fishing operations, it is by law regarded as a Port and managed under the National Ports Act 12 of 2005.



In some of the proclaimed fishing harbours, fishing operations are minimal or completely overshadowed by recreational activities, including ski boat clubs, yachts, and other recreational craft, in the case of Gordon's Bay. Another notable example is Hout Bay, which has evolved into a port supporting ferry services, industry-sized fishing vessels, processing plants, factories, and restaurants.

Other activities in fishing harbours

Gordon's Bay – boat/yacht club



Hout Bay -fishing and leisure



The upkeep of the proclaimed fishing harbours has been a shared responsibility between the DFFE and the DPWI. However, over time, the maintenance has not been of standard, as a result, these harbours have deteriorated and in need of restoration therefore small harbour development remains a priority in both the Department of Public Works and Infrastructure and Department of Forestry, Fisheries and the Environment.

During the Operation Phakisa: Small Harbour Development Mini Lab held in November 2018, it was decided that the reach shall extend across all coastal provinces. New harbours must be developed in areas where they did not exist previously or in priority underserved coastal areas. The new harbours would be customised for multiple economic uses. The new harbours are set to be constructed in Port Nolloth (Northern Cape), Port St Johns (Eastern Cape) and Port Shepstone (KwaZulu-Natal).

New harbour sites

Port Nolloth



Port Shepstone



Port St. Johns



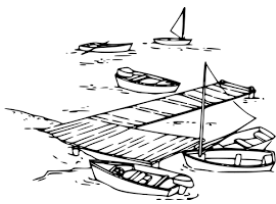
The revitalisation and expansion of small harbour infrastructure are key interventions to grow the ocean economy. Well-functioning harbours support fishing, aquaculture, tourism, freight and logistics, boatbuilding, and small enterprise development. In instances, the small harbours serve as ports of entry

and exit. These harbours are both economic hubs and a risk to illegal trade and passage if not managed and secured properly.

Other forms of small harbour-related infrastructure have to be considered. These other forms include Marine Vessel Access Points (MVAP) such as jetties, slipways, beach launch sites which are to be developed and maintained so as to broaden safe ocean access with minimal infrastructure.

Marine Vessel Access Points

Jetty



Slipway



Beach/surf launch



The Small Harbours Development overarching priority objectives are to:

- Redevelop existing small harbours to support multiple economic uses.
- Identify new sites for harbour establishment in underserved provinces.
- Formulate institutional and legislative models for sustainable harbour governance.
- Promote job creation, skills development, and enterprise growth.
- Facilitate investor confidence through structured funding models.

3.3 Oceans Economy and Coastal and Marine Tourism

Coastal and marine tourism is a cornerstone of South Africa's ocean economy, contributing to economic growth, employment, and community livelihoods while leveraging the country's extensive coastline and rich marine biodiversity to attract both domestic and international visitors. The Department of Tourism, in partnership with various tourism stakeholders, is implementing the Coastal and Marine Tourism Implementation Plan. The vision is to grow a world-class and sustainable coastal and marine tourism destination that leverages South Africa's competitive advantage in nature, culture, and heritage.

Through this Plan, the coastal and marine tourism sector will contribute about R21.4 billion to the GDP and create about 116 000 direct jobs by 2026, thus reducing poverty, inequality and unemployment, while contributing to sustainable livelihoods and development.

The Coastal and Marine Tourism Implementation Plan is being implemented in a nodal or cluster approach which prioritises destinations rather than individual tourism projects or products. The identified nodes/clusters encompass the following geographic areas:

Node 1: Durban and surrounds (KwaZulu-Natal);

Node 2: Umkhanyakude District including Umhlabuyalingana and surrounds (KwaZulu-Natal);

Node 3: Port St Johns to Coffee Bay (Eastern Cape);

Node 4: East London, Port Elizabeth and surrounds (Eastern Cape);

Node 5: Cape Town and surrounds (Western Cape); and

Node 6: West Coast and surrounds (Northern Cape).

Initiatives in all of these nodes cover six thematic areas namely:

- marketing, events and routes;
- regulations and permitting;

- research and spatial planning;
- beach precinct development, tourism infrastructure and tourism safety;
- maritime tourism; and
- skills development.

The Plan contains tourism projects integrated with the creative industries and cultural heritage. Opportunities include enterprise development, such as local supplier development (arts and crafts and beachfront businesses), access to markets, skills development, and improved infrastructure. The six thematic areas share a total of 542 activities. Out of the 542 planned activities, the Delivery Unit has successfully achieved 389 activities, with 32 activities underway, and 121 activities that are either still in the planning phase or have not yet commenced. Therefore, the overall performance of the Delivery Unit stands at 71.7% as at May 2026.

The following initiatives have been implemented: Blue Flag Beaches Programme, Boat Based Whale Watching and Shark Cage Diving, unblocking legislative constraints impeding on tourism development, development of tourism facilities, coastal events, development of the framework to measure the economic impact of coastal and marine tourism in South Africa and research study on the governance and coordination of coastal and marine tourism, spatial tourism master plans for Hondeklip Baai to Port Nolloth, Port St Johns to Coffee Bay, Orange River Mouth, Cruise Tourism Maximisation Framework, CMT Skills Audit and CMT Skills initiatives.

3.4 Ocean Economy, Ocean Governance and Marine Spatial Planning

South Africa is an ocean nation: the marine area under South African jurisdiction is greater than the country's landmass. The vast ocean area within the Exclusive Economic Zone is rich in biodiversity and other natural resources, providing significant social and economic opportunities. The Department of Forestry, Fisheries and the Environment (DFFE) plays the leading role in ocean governance in South Africa by managing, protecting, and ensuring the sustainable use of the country's marine and coastal resources and in facilitating and coordinating the ocean economy programme across various sub-sectors and focus areas.

These ocean resources sustain numerous industries such as tourism, fisheries, mariculture and mining. Telecommunication cables and other underwater infrastructure are part of the country's critical economic backbone. The ocean and coastal areas are also linked to the country's cultural heritage and are therefore

significant for the well-being of South Africans and the safeguarding of traditions. In addition, the ocean provides opportunities for future uses such as renewable energy and bioprospecting.

The broad and growing range of these human activities and interests in the ocean requires careful and improved coordination and cooperation in making decisions on the sustainable use, conservation, and management of our marine resources. This is reflected in South Africa's Ocean Economy initiative that seeks to boost sustainable ocean development while also managing both the impact and the footprint of these activities. An integrated approach to marine planning and management has been adopted, and it reflects the connectivity and diversity of marine socio-ecological systems in times of a changing climate and expanding economic interests. The broad and growing range of human activities and interests in the ocean space requires careful and improved coordination and cooperation in making decisions on the sustainable use, conservation, and management of our marine resources. In this context, Marine Spatial Planning (MSP) is introduced in South Africa as a holistic approach that guides when, where, and how human activities occur in the ocean space. The ultimate aim of MSP is to manage human demands in the ocean area in paths that integrate conservation, economic, and social interests. MSP attempts to unlock the socio-economic growth potential of the ocean while sustaining the provision of ecosystem services in a healthy ocean. In the MSP process, conflicts between sectors are proactively avoided, synergies among marine uses are enhanced, and framework conditions for better ocean governance and capital distribution are established.

Marine Spatial Planning advocates for planned ocean economic activities under the Oceans Economy Master Plan to be conducted in harmony, in a sustainable manner, and in accordance with all ocean users. MSP area plans are therefore being developed to enhance the use of the ocean space for maximum economic and social benefits afforded to all ocean users.

4. Overview of the Oceans Economy Master Plan

South Africa's oceans economy involves diverse, multiple and sometimes overlapping industries that operate – directly and indirectly – within the marine environment. Respective sub-sectors are governed by policy and legislation of different Government departments and State-owned entities, through specific legislative mandates. Accordingly, this document includes separate, but mutually reinforcing, sub-sector plans that collectively form an Oceans Economy Master Plan, which seeks to stabilise, revive and grow key sub-sectors of South Africa's Oceans Economy for the next five years and beyond. These sub-sectors are:

1. Marine Manufacturing and Repairs;
2. Marine Transport (including Freight, Logistics and Cargo);
3. Aquaculture (Freshwater and Marine);
4. Fisheries (Small-scale and Commercial); and
5. Offshore Oil and Gas (Exploration).

Each sub-sector plan, while in practice accountable to different Government departments, is ultimately linked to the successful realisation of others. In this regard, the aforementioned sub-sector plans are presented in this Master Plan in separate sections below. Each of the sections includes a global and national overview of a sub-sector, including current and projected economic trends, followed by an indication of challenges, opportunities and tables that visually unpack various interventions which aim to stabilise, revive and grow each sub-sector for the next five years and through to 2035, including important policy considerations.

Before these sections are explored in more detail, it is worth unpacking the overall vision of South Africa's Oceans Economy sector and how the Master Plan aims to realise this vision, as well as the sector's overall developmental objectives.

4.1 Vision of the Oceans Economy Sector

To sustainably unlock the socio-economic potential of the Oceans Economy

4.2 Strategic outcomes of the Master Plan

The vision of the South African oceans economy sector can only be realised through the achievement of key targets for each of the five sub-sectors outlined above. These targets are to be achieved by implementing high-level, mutually reinforcing interventions that are to be prioritised in three broad thrusts: short, medium and long term, which align to the Medium-Term Development Plan (MTDP), particularly Strategic Priority 1: Drive inclusive growth and job creation.

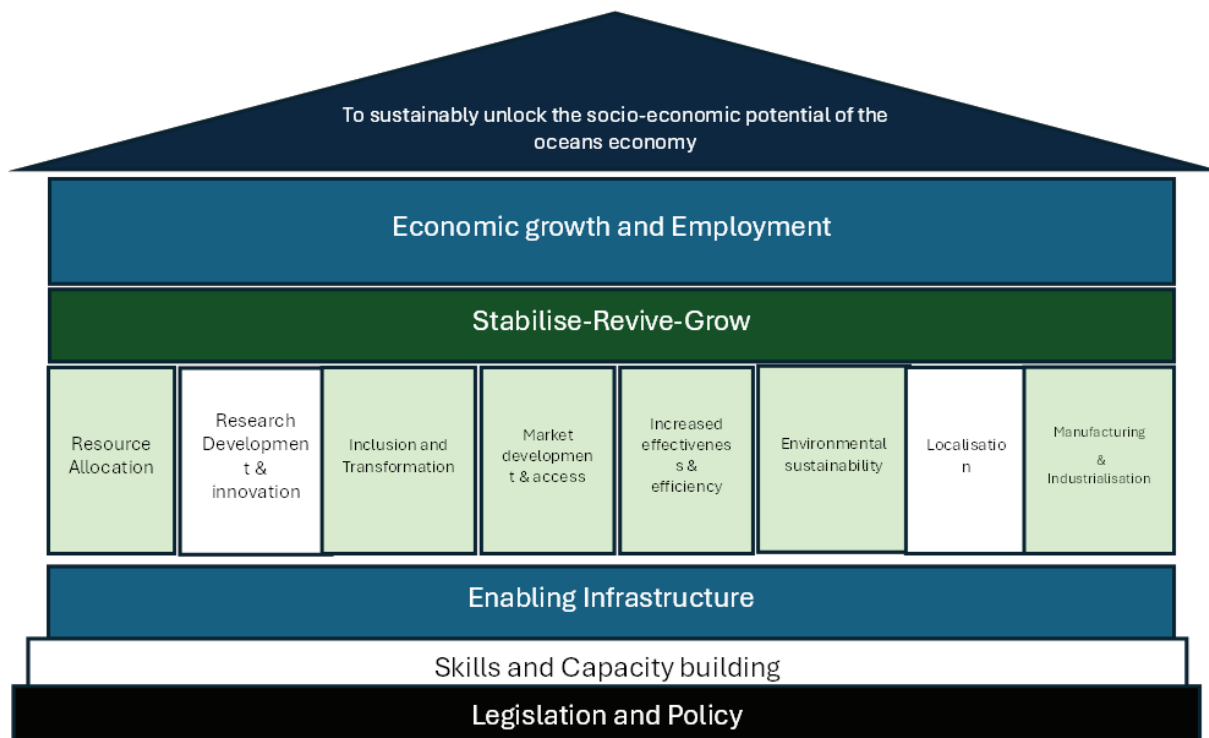
In broad terms, the various interventions are aimed at reviving and stabilising economic activity in ocean space and sub-sectors towards its overarching objective of creating between 800 000 and 1 million jobs and contributing between ZAR129 billion and ZAR177 billion to South Africa's GDP by 2035.

Based on the research completed for this Oceans Economy Master Plan, eight (8) fundamental Master Plan pillars have been identified as key focus areas to be actioned through to 2035. As outlined in Figure

4 below, these pillars are envisioned to actively support the realisation of the 2035 vision of the South African Ocean Economy sector, provided that three foundational elements – namely, an enabling legal and policy environment, skills and capacity building, and infrastructure – are urgently prioritised by Government and stakeholders. The eight identified pillars are:

- **Resource Allocation**, to ensure equitable and transparent access to ocean resources;
- **Research, Development and Innovation**, to drive the decision-making, planning and the rapid development of the oceans economy;
- **Accelerated Transformation and Skills Development**, through equitable high-impact transformation interventions to particularly empower women, the youth, people with disabilities, as well as SMMEs;
- **Market access and development**, to ensure access to local, regional, and global markets, whilst also protecting and advancing the South African national interest;
- **Increased effectiveness and efficiency**, to enhance the competitive and comparative advantage of South Africa's oceans economy;
- **Environmental, social and governance sustainability**, to ensure that the industry addresses potential negative environmental and social impacts;
- **Localisation of value chains**, to increase market share for local enterprises and SMMEs, implementation of meaningful supplier development programmes to increase the local footprint, and enhance local capabilities to internationally acceptable standards throughout these value chains; and
- **Manufacturing and industrialisation**, to drive value-addition within the broader industrial economy, and particularly the oceans economy.

Figure 4: Strategic Pillars of the Ocean Economy Master Plan



The implementation of these eight pillars for the Oceans Economy Master Plan, within the proposed timelines, ultimately aims to unlock the potential of South Africa's oceans.

By and large, the successful implementation of these pillars will rely on the adoption of appropriate policy and legislation, combined with infrastructure, skills and capacity, as well as research and development and innovation to drive high impact interventions.

It is also essential that a comprehensive monitoring and evaluation framework be put in place to ensure that implementation plans emanating from this Master Plan are tracked and their impact reported.

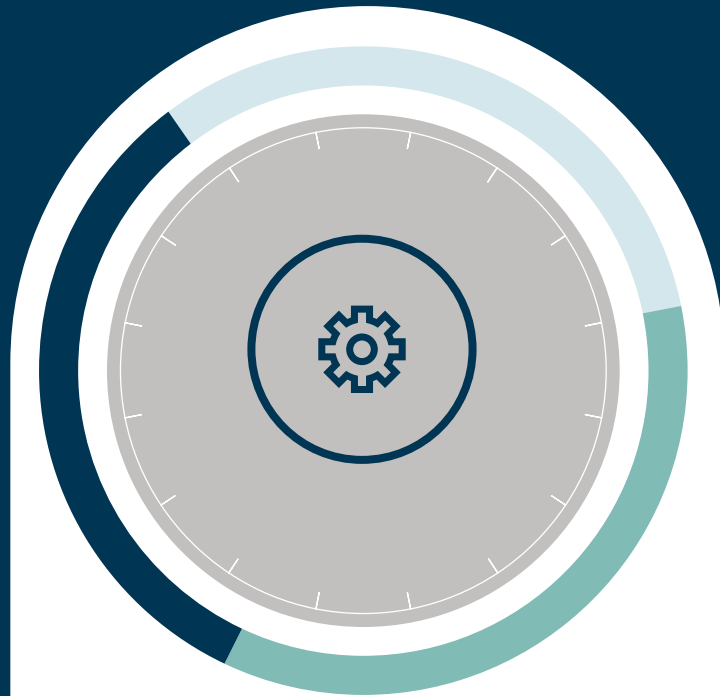
The eight Master Plan pillars, in turn, are expected to produce the following developmental objectives:

- new product offerings;
- new jobs;
- new entrants and increased SMME participation in the sub sectors;
- enhanced economies of scale for locally produced components that are in use in several sectors, including marine industries;
- new markets, and increased and diversified market access;
- incentives to accelerate growth and investment;
- transparent and efficient resource allocations;

- improve the livelihoods and socio-economic conditions of ocean-based communities;
- new local supply chains through localisation;
- increased manufacturing output and industrialisation of operations to support value-addition;
- equitable access to infrastructure and services; and
- effective and efficient protection of ocean resources to ensure sustainable use.

SUB-SECTOR PLANS

MARINE MANUFACTURING AND REPAIRS



5. Marine Manufacturing and Repairs Sub-Sector Plan

Marine manufacturing and repairs include ship and boat building, manufacturing of floating structures (drills, pontoons), manufacture of marine components and equipment, ship and boat repairs, rig repairs, ship recycling, specialist marine services (including maintenance, hull cleaning, and refurbishment, marine engineering and design), and marketing, sales and distribution of vessels and equipment. The industry may also include manufacturing and other facilities outside of the boat and shipyard, which provide specialist original equipment, parts or services for boat and shipbuilding activities within a yard.

This section of South Africa's Oceans Economy Master Plan presents a sub-sector plan for the Marine Manufacturing and Repairs industry. The plan deals with the following:

- A global review of the industry;
- A national review of the industry;
- Current interventions;
- Challenges;
- Opportunities;
- Skills, transformation, and inclusion;
- Research, development and technology;
- Environmental sustainability;
- Policy considerations; and
- Targets and interventions through to 2035.

5.1 Global sub-sector review

The United Nations Conference on Trade and Development (UNCTAD) explains that the global shipbuilding, repair and recycling industry is highly concentrated and specialised, and characterised by entry barriers – such as delivery times, reliability of yards, location of production and logistics – which often discourage new firms from entering the market.³⁶ At present, global marine manufacturing and repair activity is concentrated in Asia. Since repair activity is carried out mostly by shipbuilding companies, high shipbuilding activity is also concentrated in the same region.³⁷

³⁶ UNCTAD, 2021, *Advancing the Potential of Sustainable Ocean-Based Economies: Trade Trends, Market Drivers and Market Access: A First Assessment*, the United Nations Conference on Trade and Development (UNCTAD), New York.

³⁷ The Business Research Company, *Ship Repair and Maintenance Services Market: Global Industry Analysis, Size, Share, Growth, Trends, and Forecast, 2021-2031*.

In 2023, China, the Republic of Korea and Japan continued to dominate the shipbuilding market with these three countries accounting for about 95 % of the global output. This was the first time that China delivered more than 50 % of the world's new ship capacity³⁸. The Republic of Korea contributed 28.2 % and Japan contributed 14.9 %. China dominated all ship segments, except for oil tankers and liquified gas carriers, which were led by shipbuilders in the Republic of Korea. The decline in contributions from Japan and the Republic of Korea in recent years have enabled Chinese shipyards to take the lead. In addition to entering the liquified natural gas (LNG) carrier segment in 2022, China overtook the Republic of Korea in container shipping in 2023. Shipyard output in the Republic of Korea peaked at around 35 % in 2016³⁹. Historically, the output from Japan in the 1970s and 1980s hovered at around 50 % (BRS Shipbrokers, 2024).

Due to low labour costs, lower safety and environmental standards and other factors, the ship recycling industry⁴⁰ is also mainly concentrated in Asia, notably in Bangladesh, Pakistan, India, and China. These four countries together account for around 90% of global demolition volumes.

In 2023 and during the first half of 2024, ship scrapping or recycling activity was subdued. Older ships were employed fulfilling opportunities that arose due to disruptions to shipping routes and benefiting from high freight rates. Continued uncertainty about the future regulatory framework and low-carbon ship technologies and fuels has also contributed to keeping ship demolition levels low.

Most of the tonnage sold for demolition was made up of bulk carriers (40.7 %), container ships (24.8 %) and offshore supply vessels (10.6 %). Although more bulkers were scrapped in 2023, demolition levels remained limited. Following a near halt in 2021–2022, container ship demolitions resumed in 2023 although the need to reroute around the Cape of Good Hope slowed some of the scrapping activity. A strong charter market meant that fewer tankers were scrapped during the year. Strong demand encouraged key players to either keep their vessels or sell them to third parties to be employed under the “shadow” fleet which, at the start of 2024, amounted to 7.4 % of the global active tanker fleet, and

³⁸ UNCTAD, 2024. Review of Maritime Transport 2024, Navigating Maritime Chokepoints, the United Nation Conference on Trade and Development (UNCTAD), New York.

³⁹ UNCTAD, 2024. Review of Maritime Transport 2024, Navigating Maritime Chokepoints, the United Nation Conference on Trade and Development (UNCTAD), New York.

⁴⁰ The ship breaking and recycling industry disassembles steel and other recyclable items of end-of-life vessels. Many parts of a ship – from the hull structure to the machinery – can be recycled and reused as scrap metal.

averaged 21 years of age (BRS Shipbrokers, 2024)⁴¹, that is, older than the general tanker fleet. Improved tanker market conditions, high freight rates, increased earnings, more employment for existing ships and higher value for older tonnage all contributed to limiting tanker scrapping.

Although, currently, over 30 % of fleet tonnage is made up of “eco” ships, which are typically at least 20 % more efficient at present-day speeds, a rapid transition to more sustainable shipping is necessary. The industry must renew its fleet and adopt newer, greener and more efficient vessels. Although ship demolition activity is currently low, the pace of scrapping is expected to rise in the coming years as the pressure to renew the global fleet intensifies. The fleet of 240 steam turbine LNG vessels offers candidate ships for scrapping (Clarksons Research, 2024d⁴²), while an end to rerouting around the Cape of Good Hope (the precise timing of which is uncertain) is expected to send more container ships to scrapping yards. The pace of demolition will also accelerate if more ship scrapping yards get approved; the European Union could approve some ship scrapping facilities in India, while Brazil and Egypt are considering entering the ship demolition business (Chambers, 2024a). Turkey, which shares some relative economic similarities to South Africa, is the fifth largest ship breaking destination, accounting for around 6% of world total for ship recycling.⁴³

The shipbuilding and repairing market is a cornerstone of global maritime operations, supporting the construction, maintenance, and modernization of commercial vessels, naval ships, offshore platforms, and specialized marine infrastructure. Shipbuilding and Repairing Market is valued at USD 233.2 billion in 2025. Furthermore, the market is expected to grow by a CAGR of 6.6% to reach global sales of USD 414.3 billion in 2034⁴⁴. This market serves critical sectors such as international trade, Defense, oil and gas, fisheries, and passenger transport. Countries with large coastlines and robust shipping industries, such as China, South Korea, Japan, the United States, and Germany, have developed highly advanced shipbuilding ecosystems.

In 2024, the shipbuilding and repairing market demonstrated strong recovery and diversification. Commercial shipyards saw a surge in orders for LNG-fuelled and dual-fuel vessels as shipping companies moved to comply with tightening carbon regulations under IMO and regional policies. Container ships, tankers, and cruise vessels with upgraded propulsion and automation systems were in

⁴¹ BRC Group, 2024. Shipping and Shipbuilding Market Annual Review

⁴² Clarksons Research 2024, Global Shipbuilding Review

⁴³ OECD, 2019. Ship Recycling: An Overview, OECD Science, Technology and Industry Policy Papers, No 68, April 2019.

⁴⁴ The Business Research Company, 2025, Ship and Boat Building and Repairing Market Report 2025

high demand. On the repair side, retrofitting services expanded to include ballast water treatment systems, scrubbers, and hull optimization tools aimed at reducing fuel consumption. The naval sector experienced a boost with increased government spending on new warships, submarines, and patrol boats amid geopolitical tensions.

Meanwhile, shipyards implemented smart manufacturing tools like robotics, IoT-enabled asset tracking, and 3D modelling to reduce lead times and enhance quality control. Workforce development programs were launched to address skilled labour shortages, and public-private collaborations focused on expanding dockyard capacity and technological capabilities in emerging economies like India, Brazil, and Vietnam.

Looking to 2025 and beyond, the shipbuilding and repairing market is expected to embrace digitalization, automation, and green innovation at an accelerated pace. New ship designs will focus on zero-emission propulsion systems, including hydrogen, ammonia, and electric-powered vessels, aligning with global climate targets. Repair and maintenance services will become increasingly predictive and automated, using AI, drones, and remote monitoring systems to detect wear, optimize maintenance schedules, and minimize downtime. Smart yards and modular construction techniques will improve operational efficiency and scalability, especially for smaller shipbuilders.

Governments are likely to strengthen support for domestic shipbuilding to reduce dependency on foreign suppliers, especially for Defence and strategic vessels. Additionally, growth in offshore wind energy and undersea cable installations will spur demand for new types of specialized marine construction vessels. As regulations tighten and the maritime industry transitions toward sustainability and digital transformation, the ability to innovate in both shipbuilding and repair will define the competitive edge in this vital global market⁴⁵.

Demolition sales by tonnage increased by 4.3 % over the previous year and reached 7.5 million gross tons or 0.5 % of the total active fleet. Volumes sold for scrapping in 2022 and 2023 were the lowest in over a decade. Following a 50 % reduction in 2022, volumes increased by only 4 % in 2023. Most of the tonnage sold for demolition was made up of bulk carriers (40.7 %), container ships (24.8 %) and offshore

⁴⁵ <https://www.researchandmarkets.com/reports/6093081/ship-building-repairing-market-outlook>

supply vessels (10.6 %). Although more bulkers were scrapped in 2023, demolition levels remained limited⁴⁶.

Following a near halt in 2021–2022, container ship demolitions resumed in 2023 although the need to reroute around the Cape of Good Hope slowed some of the scrapping activity. A key development in ship demolition activity is the entry into force of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. The Convention entered into force on 26 June 2025, and compliance means additional expenditure and costs for ship demolition yards. For example, all facilities in India, which accounted for 7.1 % of total gross tonnage sold for scrapping in 2023, are currently compliant. In Bangladesh, which accounted for about 46 % of tonnage sold for demolition, one third of the facilities are reportedly compliant or in the process of becoming certified. There remains uncertainty regarding Pakistan, another key player, as it currently lacks compliant facilities.

The European Union is also lacking compliant recycling capacity and is reviewing its Ship Recycling Regulation (SRR). Since 2020, this regulation has required European Union-flagged ships to be recycled at an approved European Union facility (Allen, 2023). The SRR requires all large sea-going vessels sailing under the flag of a European Union member State to use an approved ship recycling facility included in the European List of Ship Recycling Facilities (European Commission, 2023a). Although ship demolition activity is currently low, the pace of scrapping is expected to rise in the coming years as the pressure to renew the global fleet intensifies. The fleet of 240 steam turbine LNG vessels offers candidate ships for scrapping (Clerksons Research, 2024d), while an end to rerouting around the Cape of Good Hope is expected to send more container ships to scrapping yards. The pace of demolition will also accelerate if more ship scrapping yards get approved; the European Union could approve some ship scrapping facilities in India, while Brazil and Egypt are considering entering the ship demolition business (Chambers, 2024a).

Trends observed since the end of 2023 suggest some diversion from these usual patterns. There seems to be a new set of conditions affecting the shipping cycle since some disturbances in its functioning have been observed in recent years. For example, while container shipping conditions improved in the first half of 2024, the sector also grappled with volatile freight rates, underlying overcapacity, an ageing fleet, a need to plan for fleet renewal and to decarbonize.

⁴⁶ UNCTAD, 2024. Review of Maritime Transport 2024, Navigating Maritime Chokepoints, the United Nations Conference on Trade and Development (UNCTAD), New York.

In terms of the latter, shipbuilding companies around the world are increasingly using green shipbuilding technologies to construct energy saving and low carbon emission vessels, including technologies such as waste heat recovery systems, exhaust gas recirculation systems, advanced rudder and propeller systems, fuel and solar cell propulsion systems, as well as the use of LNG fuels, green hydrogen and green ammonia for propulsion and auxiliary engines.⁴⁷ The shift in the industry towards greener technologies is further being promoted by international shipping companies implementing their own internal stringent ship recycling regulations that ensure that their end-of-life vessels are recycled in compliant facilities. This changing market dynamic is expected to open opportunities for certified Green Ship Recycling Facilities in key locations around the world.

With regards to the multilateral instruments that govern the industry globally, some of the key international regimes include the: The United Nations Convention on the Law of the Sea (UNCLOS); the Basel Convention; the Marine Environment Protection Convention (MARPOL); and several regulatory legal instruments of the International Maritime Organisation (IMO). Between these and other institutions, there have emerged a number of recent conventions dealing with compliance to ship recycling, specifically the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ship (2009) and the Ship Recycling Regulation of the European Union (2013). Both of these regulations place responsibility on ship owners, ship builders, suppliers, recycling facilities and national authorities to ensure the safe environmentally viable management of hazardous material and the sustainable recycling of ships.⁴⁸ The EU regulation in particular is the only legally binding and comprehensive instrument on ship recycling in force in the world today. Currently, there are just 30 compliant yards, most of them located in the EU, but also in Turkey and the USA, and additional yards in Turkey and India are expected to be added on list in the near future.⁴⁹ South Africa has not yet fully domesticated the Hong Kong Convention into national legislation through a dedicated Ship Recycling Act or Regulations. The department of transport is in a process of conducting the domestication of the convention into national legislation.

⁴⁷ The Business Research Company, 2025. *Ship Repairing Global Market Report 2025*

⁴⁸ MAPROF, 2020. *Report on the European List of Ship Recycling Facilities: Updated report (December 2020)*.

⁴⁹ The European Commission, 2019. *New EU regime for safer and greener ship recycling enters into force*, 8 January 2019, available at: < https://ec.europa.eu/info/news/new-eu-regime-safer-and-greener-ship-recycling-enters-force-2019-jan-08_en>

5.2 South African sub-sector review

The South African marine manufacturing and repair sector is predominantly made up from three segments: ship repair, boat building and shipbuilding. Until 2014, when the global oil industry went into decline due to a plunging oil price, rig repairs in South Africa was a major contributor and job creator. The marine manufacturing and repair supply chain has been mapped out to include several segments (see Table 1 below), but almost all are dependent on the foundation of ship/boat building and repair. All three segments, but especially shipbuilding and repair, were under severe pressure to survive. Interventions were implemented in the early years of Operation Phakisa Ocean Economy, from October 2014 to date. Transnet National Ports Authority (TNPA) had allocated substantial amounts to initiate several port infrastructure projects assigned as Operation Phakisa Projects for the maintenance and upgrade of existing ship repair facilities; especially in the Ports of Durban, Cape Town, Saldanha Bay, Port Elizabeth and East London. Table 2 below shows the progress made in respect of the refurbishment and maintenance undertaken on ports as part of the Operation Phakisa programme, including those complete and those not yet completed.

Ship repair has the potential to expand significantly and generate many jobs. Since the adoption of Operation Phakisa in 2014, efforts have been made to modernize the dry docks at South African ports to enhance efficiency. Currently, the ship repair facilities in each port fall under the port management; both operationally and in terms of capital projects. Two dry dock facilities in Durban and East London are mainly used to service TNPA's internal fleet, accounting for 64% and 81% of internal usage respectively.

Transnet National Ports Authority has developed a Ship Repair Strategy to accelerate infrastructure development, improve operational efficiencies, financial sustainability, and organisational integration. Furthermore, this strategy aims to facilitate transformation and socio-economic imperatives in the port system through meeting market and industry demands. The approved Ship Repair Strategy will accelerate the execution of the following; the development of new facilities, such as Ship Lifts to create additional capacity for smaller fleet and allow dry docks to accommodate larger ships, thereby meeting market demands; augmentation of marine engineering workshops; centralisation of the business unit to support an integrated approach; capacitation of the Ship Repair facilities with the required skills and resources.

Amongst other considerations, this requires finding the right balance between the use of State-owned common user facilities, to guarantee Government inclusion objectives, ensuring that businesses have equitable access to infrastructure, facilities and engineering equipment to participate successfully in the value chain, especially for new entrants and local enterprises.

Table 1: Industry supply chain in South Africa

Segments	Current status	Growth potential
Boat building	Well-established	High: when priority interventions are applied
Shipbuilding	Well-established	High: when priority interventions are applied
Ship repair	Well-established	High: when priority interventions are applied
Oil Rig repairs	Skills still exist	Significant: interventions required to revive
Ship recycling	New venture	Limited: no infrastructure
Component manufacturing	Extremely limited (low local demand)	Significant: with export market development, once local demand is stimulated
Component localisation	Extremely limited (low local demand)	Significant: with export market development, once local demand is stimulated
Marine engineering and design	Limited and aging skills (base exists)	Considerable: with export opportunities, once local demand is stimulated
Funding (private)	Limited Public funds for past decades	Considerable: for private funding once the public-private-participation (PPP) framework is defined.
Funding (ship repair)	Limited public funds for past decades	Considerable: for private funding once a ship repair strategy has been approved,
Market access	Historically fragmented	Considerable: requires “Team SA” approach
Research and Development	Extremely limited (low local demand)	Considerable: once local demand is stimulated
Technology Transfer	Extremely limited (low local demand)	Considerable: once local demand is stimulated

The importance of the industry to the economy has been underlined in a number of recent policy documents. In 2017, the Comprehensive Maritime Transport Policy for South Africa (CMTP17) argued that the industry “has the potential to offer significant employment opportunities for thousands of South Africans”. A year later, the Department of Trade, Industry and Competition (the **dtic**) published its Industrial Policy Action Plan (IPAP) for the period 2018-2021, noting that “the marine manufacturing industry is at the core of economic growth”, with high growth potential and major spin-offs to other industries, including steel, engineering equipment, port infrastructure, trade and shipping services.⁵⁰ Likewise, as identified by the **dtic** (and classified under SIC Codes 38410 and 38420), the manufacture and repair of ships and boats in South Africa is viewed as a highly strategic industry with high economic multipliers, generating employment and growth across numerous sub-sectors in the industry’s value chain, particularly the component manufacturing sector.

South Africa’s marine manufacturing and repair industry is well-established and has a reputation for quality and customisation. The industry offers world-class repair, refurbishment and maintenance services at highly competitive rates. Repair and maintenance costs are over 40% lower compared to those in Korea, Japan, the Netherlands, and Germany⁵¹. Shipbuilding and boatbuilding⁵² clusters are predominantly based in Cape Town, Durban, Knysna and St Francis, which build and repair various classes of ships (24m and up) and boats (24m and below). Around 90% of locally-built vessels – notably catamarans, yachts, rescue craft and patrol boats – are exported worldwide, primarily to the United States (US) and the Caribbean.⁵³ Additionally, some local companies have developed capacity in niche segments in commercial and public sector markets, including fire-fighting boats, crew transport boats for the oil and gas sector, and specialised supply vessels for the diamond industry – underlying South Africa’s growing capacity to build high-quality specialised vessels locally.⁵⁴

There are three drivers of marine manufacturing and component manufacturing in South Africa. The first are world-class recreational boats, particularly catamarans, built for private sale and charter use – and almost exclusively for export. South Africa has carved out a substantial niche in this market, with some

⁵⁰ The dtic, 2018. *Industrial Policy Action Plan (IPAP) 2018/2019 – 2020/2021*, Pretoria.

⁵¹ Invest SA Fact Sheet Oceans Economy 2020

⁵² It is important to distinguish shipyards and boat building hubs. Shipbuilding requires supporting port infrastructure and port proximity inclusive of dry docks and floating dry docks. Boat builders do not require dry docks but instead need road access and crange for launching of boats. This means they can be located a greater distance from a port.

⁵³ Veitch, C, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

⁵⁴ This includes the construction of two mining supply vessels for the De Beers Group under a ZAR150 million contract with SMIT Amandla Marine, a specialist marine solutions provider based in Cape Town, the largest black-empowered company in the marine industrial sector in South Africa.

local companies seen as global leaders. In fact, South Africa is the second largest producer of catamarans globally, after France. This is largely driven by one production yard – Robertson and Caine – which currently produced more than 220 boats per year and employs around 1 700 people,⁵⁵ and one superyacht builder – Southern Wind Shipyard – which produces award-winning monohulls in the superyacht category.⁵⁶ The second driver are ships of up to 150 meters for civilian and military use built locally for Government and also for private clients, both locally and abroad. The third are South African-designed ships and boats that are built overseas. Both the ship and boat building segments are backed by an established supply chain of manufacturers, technicians, fabricators, installers and South Africa's boating community has successfully transformed their passion into a globally competitive industry that now creates thousands of jobs system integrators.⁵⁷

Around 70 local companies operate in the ship and boat building and repair industry. The majority of these are micro and small owner-managed enterprises and collectively provide over 4,500 direct jobs.⁵⁸ Of the total jobs, around 3 000 are in recreational and luxury boat building,⁵⁹ with the segment consistently generating large export volumes and boat yards having full order books over several years. Just over half of total industry revenue comes from this segment, estimated at around ZAR2.2 billion in 2019, followed by the commercial shipbuilding segment (27%), vessel and equipment marketing, sales and distribution (10%), marine services including vessel maintenance, repairs and testing (9%), and component manufacturing (3%). In 2020, the value of total vessel exports (ships, boats and floating structures) totalled ZAR2.8 billion (marginally down from ZAR2.9 billion in 2019), while imports totalled ZAR831 million (down from ZAR994 million in 2019).⁶⁰

South Africa's boating community has successfully transformed its passion into a globally competitive industry that now creates thousands of jobs. Cape Town has grown into a regional boatbuilding hub, home to some of the world's largest producers of luxury catamarans. In 2024, the industry experienced significant growth in boat and ship exports, amounting to R 4.3 billion, supported by skilled artisans⁶¹. In the financial year (2024/2025), there has been an increase in the number of component and equipment

⁵⁵ BlueCape, 2025. *Marine Manufacturing*, accessed on 09 October 2025, available at: < <https://blue-cape.co.za/sectors/marine-manufacturing>>

⁵⁶ Joseph Boysen, 2018. 'Local luxury boat exports contribute R1bn to economy', *IOL*, 28 September 2018.

⁵⁷ Invest SA Fact Sheet Oceans Economy 2020

⁵⁸ Employment figures are variable due to the highly cyclical nature of the industry, with companies typically boosting their permanent workforce with temporary contract workers or outsourcing processes to subcontractors when required.

⁵⁹ Boysen, 2018. 'Local luxury boat exports contribute R1bn to economy'.

⁶⁰ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

⁶¹ Cape Chambers of Commerce and Industry, CEO Column, Oct 2025

manufacturers and economic activity in this sub sector. These companies include sail makers (4 lofts), mast builders, rigging components, marine grade rope, aluminium doors, upholstery, carbon fibre hatches, engine components and stainless-steel accessories. The country's Boatbuilding and Marine Manufacturing sector is currently valued at about **R2.2 billion** per annum.⁶²

Compared to other industries worldwide, South African shipyards tend to have long production cycles: the manufacturing of a ship usually takes place over an extended period (i.e. long production timing) for a single unit output (i.e. lower volume of production) and at high production cost (i.e. high unit values). In short, contracts tend to be project-based, and the manufacture of a single ship may take more than a year to complete.⁶³ Long production timescales mean that local manufacturers often deal with long cash flow cycles and are exposed to changes in inputs costs driven by inflation or exchange rates, while final product price is typically fixed upfront. The requirement for availability of such working capital at the initial stage of a project often constitutes a high barrier to entry. Based on reported information on imports, it is estimated that, on average, 12% of components used in the manufacturing of ships/boats are directly imported, and that 47% of their inputs are indirectly imported by suppliers, making a total of 59% of inputs attributable to imports.

Local manufacturers are heavily reliant on imported components because key components and raw materials are not locally available with the required international marine certifications, and because local manufacturers are often not in a position to obtain the said certifications, due to the high cost involved with international auditing. The result of this problem is two-fold. First, most components and materials are sourced from companies with strong brands and global support networks. Second, local equipment and materials importers are highly exposed to exchange rate volatility and global supply chain disruptions, while local component manufacturers are more exposed to low demand volumes.⁶⁴

The industry's heavy reliance on imports is viewed as a major challenge for South Africa to develop a sustainable ship and boat building industry all the way down the value chain, given that such capabilities would make a significant contribution to employment creation.⁶⁵ Notwithstanding these challenges, the marine manufacturing industry plays a significant role in South Africa's oceans economy, although there is still room for improvement. The leisure market industry employs 4 800 people and exports 94% of its

⁶² BlueCape, 2025. Marine Manufacturing, accessed on 09 October 2025, available at: < <https://bluecape.co.za/sectors/marine-manufacturing>>

⁶³ Veitch, 2021. Maritime Transport and Marine Manufacturing in South Africa.

⁶⁴ Veitch, 2021. Maritime Transport and Marine Manufacturing in South Africa.

⁶⁵ The dtic, 2018. Industrial Policy Action Plan (IPAP).

production valued at R4.9 billion in 2023 according to Blue-Cape, 2024. This equates to a growth of 22.3% per annum over the last five years. The industry has contracted in recent years, with figures from the dtic indicating that the industry secured ZAR6.9 billion (or 26.4% of total sectoral investment) in 2018 dropping to ZAR4.4 billion in 2019 and down again to ZAR3.4 billion in 2020⁶⁶. The decline in revenue is owed primarily to a reduction in profits in commercial manufacturing. One likely reason for this is that Government, since 2014, has struggled to maximise the economic opportunities afforded by the Operation Phakisa-Oceans Economy, as discussed in Part 1.

In terms of repair and refurbishment, South Africa has maintenance and repair facilities in two main commercial ports, namely in Cape Town and Durban, one military port in Simon's Town, as well as limited drydock facilities in the port of East London. While South Africa is a proven location for resupply, repairs and maintenance for regional and international shipping companies, the country accounts for less than 1% of the global market valued at ZAR490 billion, with marine repairs undertaken on approximately 5% of the estimated 13 000 vessels that visit South African ports annually.⁶⁷ Because the national capacity available for ship repair has steadily declined over the last decade despite major fleet growths worldwide, at present numerous ships are often turned away because of dry dock and floating dock unavailability. Should this capacity not be addressed in the near term, it is estimated that the available market will exceed South Africa's ship repair capacity by more than fifteen-fold.⁶⁸

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⁶⁶ Veitch, 2021. Maritime Transport and Marine Manufacturing in South Africa.

⁶⁷ Docking is the mooring of a ship to a pier or quay, while berthing is the mooring of a ship within an allotted space at that particular pier or quay. See: TNPA, 2022. *Port Statistics*, website of the Transnet Port National Authority, available at: <<https://www.transnetnationalportsauthority.net>>

⁶⁸ SASR, 2013. *Meeting the Challenges for an African Maritime Economy Ship Repair and New Builds 2013*, South African Association of Shipbuilders and Repairers (SASR).

⁶⁹ Table updated from: Brian Gowans and Keith MacHutchon, 2009. 'Opportunities for future expansion of ship repair in South Africa', *Southern Africa Shipping News*. (64)3, pp 10-14. Southern African Shipyards Publishers.

Table 2: Drydock and floating dock space in South Africa

Port	Dock	Capacity (tons)	Length (m)	Width (m)	Draft (m)	Activities
Cape Town	Robinson	17 000	161	20.7	7.9	Supports vessels and larger fishing vessels
	Sturrock	120 000	360	45	13.7	Supports voyage repairs, surveys and much longer than modernisation and upgrades
	Synchrolift	1 800	61	15	6	Supports vessels and larger fishing vessels
Simon's Town	Selbourne	45 000	230	29	1	Supports vessels and larger fishing vessels
	Synchrolift (Navy SMTN)	2 000	60	15.5	11	Supports smaller Naval vessels and larger fishing vessels
East London	Princess Elizabeth	30 000	200	24	10	Overflow from Durban
Durban	Prince Edward Graving Dock	70 000	352	33.5	12.5	Supports mainly voyage repairs and periodic surveys
	Dormac's 2 x Floating Dry Docks	4 000	110	24	8	Supports vessels and larger fishing vessels
		4 500	120	26.5	9	
	Synchrolift (Navy Durban)	2 280	60.5	20	11	Supports smaller Naval vessels and larger fishing vessels. (Inshore working areas load degraded due to delayed DPW Repair project).

Table 2: Drydock and floating dock space in South Africa

Port	Dock	Capacity (tons)	Length (m)	Width (m)	Draft (m)	Activities
Port Elizabeth	Slipway	1 200	74	12	4.5	Supports vessels and larger fishing vessels Boat The Slipway project was a refurbishment project to bring it back to spec as it had been downgraded. The ship lift was the new facility that added more capacity in PE.
Port Elizabeth	Vertical Hoist Lift with manoeuvrable rubber wheels	90	8.2		4m	More use for fishing vessels (squid industry prominent)
Mossel Bay	Slipway	200	30	12	3	Supports small fishing vessels
Saldanha Bay	Nil	-	-	-	-	Emergency on board assistance only
Richards Bay	Nil	-	-	-	-	Emergency on board assistance only
Ngqura	Nil	-	-	-	-	-
Port Nolloth	Nil	-	-	-	-	-

*DD = Dry Dock | FD = Floating Dock

With regards to market access, drydock space availability is perhaps South Africa's most valuable commodity in the industry, representing one-third of the total dry-docking capacity of the entire southern hemisphere. However, two crucial factors are limiting South Africa's ability to attract additional foreign clients and local businesses in the country's commercial ports.

The first concerns the competitive forces between private sector dry docks (which tend to limit public access due to their corporate and internal business processes) and State-owned docking facilities (some of which are under-maintained and inefficient). Other than three (3) privately owned floating docks in Durban, three (3) additional concrete dry-docking facilities are owned and managed by TNPA. Industry is therefore largely dependent on the TNPA for docking facilities and marine services, and any port inefficiencies have a potential detrimental impact on industry's ability to operate and to be internationally competitive.

The s56 process is a transparent, fair and equitable process prescribed in terms of the National Ports Act to grant access into the port space. While in some cases it would have taken longer to conclude in TNPA has in the recent past successfully concluded a number of s56 RFP's in the various ports and have reduced the process to 18 months and is working towards having the process reduced even further to 12 months.

It is generally agreed within the industry that more facilities need to be built and established within this sub-sector of the oceans economy. For example, TNPA requires a floating dock or ship lift facilities dedicated to the Transnet fleet in Durban in order to free up capacity in the larger concrete graving docks. To this end, the TNPA's tug and dredger fleet has increased, and over the last 5-years TNPA has utilised more than 50% of available time capacity within the larger graving docks. However, during this same period, TNPA has been executing Operation Phakisa-related projects in all three TNPA graving docks, inclusive of trying to keep operations running at acceptable levels.

Finance lies at the heart of any successful marine manufacturing and repair industry to help facilitate the delivery or repair of vessels. Historically, South African commercial banks have been largely unwilling to accept the production of boats and ships as collateral, especially for longer projects that are vulnerable to exchange rate fluctuations, making it near impossible for local firms to access finance. That said, several local stakeholders provide funding support to the industry, including commercial banks, development funding institutions (DFIs) as well as other niche funding programmes or initiatives. These

institutions are further supported by well-established export credit institutions, such as the Export Credit Insurance Corporation (ECIC), and trade finance products, specifically provided by commercial banks.

Due to the operating nature and activities of ship/boat builders and repairers, funding requirements generally includes a combination of financial instruments, including guarantees/performance bonds, working capital, export credit support and currency hedging instruments. Boat builders, as mentioned above, are focused primarily on the export market, and therefore tend to have marginally different marketing and funding requirements compared to their shipbuilding counterparts. Commercial ship builders, on the other hand, typically contend with longer and more expensive projects and the sustainability of their operations and supply chains have been hampered by procurement bottlenecks and lack of long-term planning. To date, the industry could benefit more from meaningful government incentives, other than support for marketing and to attend international pavilions and trade shows provided by the Export Marketing Investment Assistance (EMIA) programme and other similar programmes.

5.3 Current interventions

Operation Phakisa-Oceans Economy is currently the most active Government intervention in the industry. In 2014, a set of eighteen (18) initiatives under Phakisa were proposed to improve port infrastructure and operations, accelerate skills and capacity building, and boost market growth (see Figure 1 below). Most (70%) of these initiatives were implemented with some challenges, the remaining interventions are expected to be completed by 2028. Critically, a key developmental objective of the initiatives included the promotion of local content, with gradual increase in the use of locally manufactured components in boat and shipbuilding.

Figure 1: Operation Phakisa: Overview of Marine Manufacturing and Transport Initiatives

A Infrastructure and operations	B Skills and capacity building	C Market growth
1 Create supportive funding and revenue model 2 Establish purpose-built oil and gas port infrastructure by appointing facility operators – Saldanha Bay 3 Align on implementation of government policy 4 Prioritise Transnet and TNPA funding allocation towards marine manufacturing 5 Maintain and refurbish existing facilities 6 Unlock investment in new and existing port facilities 7 Implement a Strategic Prioritised Project – Richards Bay 8 Implement a Strategic Prioritised Project – East London	9 Train 2,550 TVET College graduates on an 18-month workplace-based experiential learner programme in scarce and critical trades over the next 5 years 10 Create dedicated OTs for the MTM sector (professional, trades, operators and seafarers) 11 Establish trade RPL, CBMT or centers of specialisation in Saldanha Bay and Richards Bay 12 Train 18,172 learners as artisans, semi-skilled workers and professionals over the next 5 years 13 Increase usage of ESSA system and targeted career awareness services as a high-value recruitment tool for MTM 14 Increase capacity to develop skills for ~1,200 ratings and ~720 officers per year	15 Create and implement a public procurement and localisation programme 16 Develop a strategic marketing campaign and value proposition for target markets 17 Propose inclusion of a preferential procurement clause in the African Maritime Charter 18 Support local registry of vessels through incentives and legislation of using SA-flagged ships for cargo and coastal operations (based on UN Conference on Trade and Development and African Maritime Charter guidelines)

(Source: DFFE, 2020, Growing the Oceans Economy): 70% of interventions in the 3 ft plan are complete.

On a more positive note, South Africa's initiative to acquire a hydrographic capability⁷⁰ (which includes a South African Navy Hydrographic Office, a Hydrographic Survey Vessel, three Survey Motor Boats, and a Sea Boat) and a multi-mission inshore patrol capability (which includes three Inshore Patrol Vessels, three Boarding Boats and three Sea Boats) from local boat and ship builders did materialise as planned – and indeed the initiative is considered by industry insiders as the lifeline for the domestic commercial shipbuilding sector.

As shown in Table 3 below, other Phakisa initiatives aimed at maintaining and refurbishing existing facilities (under Initiative 5), unlocking investment in new and existing port facilities (under Initiative 6) and implementing 'Strategic Prioritised Projects' (under Initiatives 7 and 8) still underway include:

⁷⁰ Hydrography, which is the knowledge of the shape and nature of the seafloor, its characteristics and its hazards, is as a critical element to the oceans economy. Almost every human activity that takes place in, on or under the sea requires some knowledge of the hydrography of the area, including shipping, port operations, environmental planning, marine spatial planning, and maritime security and defence.

Table 3: Goals and status of selected Operation Phakisa Oceans Economy projects for Marine Manufacturing and repairs

Initiative	Location	Projects	Completion Status
5	Cape Town	RDD New CaissonFEL3	Complete
5	Cape Town	SDD Infra Upgrade	95% to be completed
5	Cape Town	Synchrolift mechanical	Aug'2025
5	Cape Town	SDD Inner Caisson	Completion 2027
5	Cape Town	12 x Facilities Capstans Upgrade	Complete
5	Cape Town	Operation Phakisa Training Centre	Complete
5	Cape Town	SDD and RDD Pumps	Complete
5	Cape Town	RDD Electrical infrastructure	Complete
5	Cape Town	Synchro Electrical and Synchro Civil	Complete
5	Cape Town	RDD & Synchrolift Electrical and Synchrolift Civil	Complete
5	Cape Town	10 dry dock jib cranes	Completion 2027
5	Mossel Bay	Slipway Execution Gate Review stage	Completion 2026 -2028
5	Gqeberha	1200-ton Slipway cradle	24% complete
5	kuGompo	Dry Dock Main Shut Off Valve	Complete
5	kuGompo	Phakisa Training Centre	Complete
5	kuGompo	04 dry dock jib cranes	Completion 2027
8	kuGompo	Ship repair and boat building yard	No bidders' expressions ⁷¹
5	Durban	12 x Facilities Capstans Upgrade	Complete
5	Durban	Inner Caisson refurbishment, Shop 24 Overhead Cranes	Complete
5	Durban	Dry Dock Pumphouse	Complete
5	Durban	10 dry dock jib cranes	Completion 2027
7	Richards Bay	Floating Dock ⁷²	No market response ⁷³

⁷¹ An alternative option of advertising land for ship recycling/marine manufacturing was also nonresponsive.

⁷² Initiative 7 envisages the development of a ship repair facility that would service the following niche markets: cargo vessels calling at Richards Bay; cargo vessels calling at Durban (excess demand); offshore supply vessels deployed on East-African offshore oil and gas field. In 2015 Transnet appointed a Transaction Advisory Team (TAT) to conduct a Market Study to validate demand and to prepare the concession documents to process a port concession under Section 56 of the National Ports Act No. 12 of 2005. The TAT Report confirmed that there exist a market risk and that potential investors were not willing to fund the identified marine infrastructure under Phakisa targeted for Richards Bay. TNPA opted to fund and execute the marine works whilst a concession would be issued for the private sector to fund, install and operate a floating dry dock.

⁷³ An Expression of Interest (EOI) process was carried out by TNPA in 2016 to obtain feedback on the market interest in a ship repair facility at the Port of Richards Bay. There were limited response and appetite from the market to invest and develop the proposed facilities. The outcome of the exercise indicated the following: No market appetite for a dry dock; The risk of sunk costs was too high and there was no willingness to fund costs of berth and marine infrastructure; and the market was upbeat for a large floating dry dock. In 2017, a prefeasibility study based on a conservative Cape size FDD was conducted. This was based on the larger dry bulk carriers that are currently calling at the Port of Richards Bay. The pre-feasibility study was based on a concession given to a private Terminal Operator (TO) expected to be 20 years being who will mobilise a floating dry dock, establish the required ship repair facility and operate the terminal, provide marine and landside supporting infrastructure needed to accommodate a floating dry dock along the Repair Quay and to provide the required bulk infrastructure for such a facility. A review of priority focuses areas for Transnet resulted in the decision to cancel the Richards Bay Floating Dry Dock Project.

Table 3: Goals and status of selected Operation Phakisa Oceans Economy projects for Marine Manufacturing and repairs

Initiative	Location	Projects	Completion Status
7	Richards Bay	Floating Dock ⁷⁴	No market response ⁷⁵
7	Richards Bay	Ship-lift and Lay-by Jetty – ‘Ship Repair/Retrofit’	Complete
7	Richards Bay	Additional Pier – ‘Shipbuilding & Repair’	Complete
7	Richards Bay	Mobile Hoist [50-ton capacity]	Complete
7	Richards Bay	New Jetty [200 x 40 m]	Complete
7	Richards Bay	Free Port status and market advantages for the SEZ	–

Two key reasons for the delay in the take-off of some projects are: (i) protracted procurement processes for the execution of Operational Expenditure (OPEX) and Capital Expenditure (CAPEX) programmes; and (ii) less than anticipated uptake by private investors through private sector participation (PSP). While private companies have been generally willing to invest in drydock facilities themselves. In 2023, Cabinet approved the Roadmap for the Freight Logistics system in South Africa, and through this structural reform, which will see the introduction of PSP to unlock investment opportunities in various sectors of the logistics chain.

Government plans to introduce a new industry policy which aims at developing a more business-friendly environment and encouraging greater private sector involvement by:

- reviewing policy and legislation for Public-Private Partnership (PPP) mechanisms;

⁷⁴ Initiative 7 envisages the development of a ship repair facility that would service the following niche markets: cargo vessels calling at Richards Bay; cargo vessels calling at Durban (excess demand); offshore supply vessels deployed on East-African offshore oil and gas field. In 2015 Transnet appointed a Transaction Advisory Team (TAT) to conduct a Market Study to validate demand and to prepare the concession documents to process a port concession under Section 56 of the National Ports Act No. 12 of 2005. The TAT Report confirmed that there exist a market risk and that potential investors were not willing to fund the identified marine infrastructure under Phakisa targeted for Richards Bay. TNPA opted to fund and execute the marine works whilst a concession would be issued for the private sector to fund, install and operate a floating dry dock.

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- reducing red tape and streamlining procurement processes for public infrastructure projects (without breaching governance requirements), including those proposed by this Master Plan; and
- ensuring that common user port facilities are efficiently managed, adequately maintained and upgraded.

5.4 Challenges

Shipping seems to have found a “new normal” as it continues to cope with the disruptions caused by the war in Ukraine and the legacies of the COVID-19 pandemic. New requirements for compliant ship recycling facilities.

In this regard, major industry challenges include:

- Insufficient launching facilities and berthing for small (primarily recreational) boats, especially in Cape Town and Knysna;
- TNPA and Industry Commercial Alignment
- Shortage of cranes, capstans and caissons;
- Lack of implementation of strategic plans for the ports;
- High costs related to commercial activities in national ports;
- Port inefficiencies causing a decline in vessels visiting South Africa for repairs and maintenance;
- Poor coordination and planning with local authorities to preserve land surrounding ports and small harbours to support port/harbour activities and marine manufacturing;
- Low and declining local demand, which inhibits the development of local component manufacture;
- Limited funding support initiatives available for three key streams (i.e. government vessels, private sector, and export markets) that can be utilised as an equity investment or contribution;
- Potential increase in competition from regional ports (e.g. Walvis Bay);
- Lack of deliberate development and capacitation of small medium and micro enterprises (SMMEs) on business-related skills throughout the marine industries value chain;

5.5 Opportunities

Despite the challenges, South Africa’s marine manufacturing and repair industry can, with urgent interventions, reverse the declining trends and generate significant jobs and inflow of foreign exchange for the following reasons:

- The availability of baseline infrastructure, facilities and engineering equipment for port users (albeit in poor condition and with inefficient and costly operating models).
- Drawing on the local manufacturing base for marine components once local demand volumes increase.
- Sufficient skills to kick-start a recovery and training institutions to feed future expansion.
- Building on the foundation laid by boatbuilding exports.
- South Africa's well-placed geographic position to tap into the international and regional market.
- Leverage AfCFTA and BRICS partnerships to develop the sector through SEZs.
- Private investors (local and foreign) willingness to invest once bureaucratic red tape is reduced and a more streamlined Public-Private Partnership (PPP) framework is in place.
- Leverage Public-Private and Public-Public Partnerships to crowd in investment for port upgrades.
- Catalyse the development and specialization of niche repairs subsectors (offshore support, fishing vessels, retrofits).
- Identifying components utilised in marine and other industries to target those for marine classification, given international demand, and utilise these to achieve localisation targets and reduce importation.
- Building on growing global trends for ship recycling and green ship breaking.
- Leveraging the emergence of Saldanha as a Green Hydrogen (GH2) Hub and tapping into the nascent Maritime Green Corridor between South Africa and Europe.
- Capitalising on recent indigenous and regional offshore oil and gas discoveries.
- Red Sea disruptions with a potential increase of maritime traffic around the Cape of Good Hope.
- Maritime Digitalisation by creating new opportunities to provide efficient sharing of information and to create an enabling regulatory framework for maritime decarbonisation to meet the IMO Net-Zero Framework.
- Expanding the Critical Skills List published by the Department of Home Affairs in 2022 to include artisanal skills that are required for the industry to thrive; and
- Introducing capacitation programmes to establish more SMMEs in the value chain, particularly those that focus on developing business-related skills within the industry.
- Import Substitution and increased exports
- Port of Richards Bay and Richards Bay Industrial Development Zone:
 - Logistics and Neobulk Facilities
 - Coal Bulk export [6 berths – 1,864m] [60 m/ton/p.a.]
 - Break Bulk [5 berths – 1,320m] ___ m/ton/p.a.]

- Liquid Bulk [3 berths – 804m] [__ m/kl/p.a.]
- General Cargo [8 berths – 1,780m]
- LNG [Proposed Berth] [_ m/ton/p.a.]
- Hydrogen / LNG [FSRU: Floating Storage & Regasification Unit]
- Energy, Oil & Gas Industry – Offshore & Africa
- Shipbuilding & Manufacturing: (Exports ~ R 2.8 bn)
- Navy, Government, TNPA & Port Control
- Export - Tugs, Dredgers, Light Vessels, etc.
- Private Sector & Industry
- Boats [< 24 metres]: ('Black Dust' issues)
- Recreational – Sailboats/Yachts & Motorboats
- Commercial Boats – RHIB's
- Other categories of vessels and pleasure boats
- Other Marine Manufacturing & Related (~ R 3.2 bn)
- Marine engines and machinery (~ R 1 bn)
- Radar, Radio and electrical (~ R 1.2 bn)
- 'Import Substitution' (HST Value ~ R 3.8 bn)
- Recapitalisation of SA Fishing Fleet

5.6 Skills and transformation

Skills development and transformation require a developing and sustainable industry that would promote inclusivity and participation of designated groups. Transformation requires more than just black economic empowerment and includes transformation of land use and property access for inclusivity in the marine economic activities. This falls in line with the philosophy of inclusivity articulated by the National Development Plan 2030 (NDP), which argues that economic transformation is not only about improving living standards and creating jobs, particularly for the historically disadvantaged, but also about broadening access to services and equity in ownership of assets, income distribution, and professions and skilled jobs.⁷⁶ Thus, new entrants and opportunities for previously disadvantaged groups need to go hand-in-hand with job creation in the marine manufacturing and repair industry, which therefore presupposes the successful and urgent implementation of initiatives to turn around the declining state of the industry. This goal will require having a competent labour force and first-rate enterprises that can

⁷⁶ The Presidency, 2017. *National Development Plan 2030: Our Future – make it work.*

increase the number of new entrants – especially youth, women, and persons with disabilities (onshore) – with meaningful participation in the industry.

A key project launched by the **dtic** in 2019 is the Marine Manufacturing, Maintenance and Repairs, and Associated Services Development Programme, which falls under the Aerospace Industry Support Initiative (AISI), and is hosted by the Council for Scientific and Industrial Research (CSIR). The programme has two components. The first is focused on supporting marine standards and accreditation, and the other on supporting technology enhancement. The overall aim of the programme is to support local companies, especially SMMEs, to obtain the required standards and accreditations to participate in the local and global marine supply chains. To date, the programme has contracted 14 beneficiaries and completed eight (8) projects, six (6) of which were standards and accreditation projects. Furthermore, the bulk of the beneficiaries supported by the programme are SMMEs with Broad-Based Black Economic Empowerment (B-BBEE) levels of one or two.

Broadly speaking, the demand and supply of skills in the marine manufacturing and repair sub-sector is considered in terms two occupational categories, namely: engineering/technically skilled occupations (artisans, engineers and technicians); and management and technical professionals. In this regard, a 2018 study by the South African International Maritime Institute (SAIMI) highlighted a slight disconnect between the type of skills being produced and those required by various sectors of the oceans economy.⁷⁷ Critical skills identified as constraining the marine manufacturing and repair industry included: naval architects, production managers, designers, electricians, electronics, metal fabricators, fitter, boiler makers and welders, riggers, technicians, boat builder and repairer.⁷⁸ The SAIMI report is intended to dovetail into a national maritime skills development strategy and implementation plan, as tasked by the Department of Higher Education and Training (DHET),⁷⁹ and in cooperation with the DFFE Oceans Economy Master Plan Working Groups.

While skills development within the broader maritime sector is spread across 14 different Sector Education and Training Authorities (SETAs), the Manufacturing, Engineering and Related Services Sector Education and Training Authority (MerSETA) oversees skills development in various sectors associated with the broader manufacturing industry. Further specialised training in maritime engineering

⁷⁷ SAIMI, 2018. Oceans Economy Skills Development Assessment, South African International Maritime Institute (SAIMI).

⁷⁸ DFFE, 2019. Operation Phakisa: Progress Summary Report 2019

⁷⁹ SAIMI, 2019. Strategic Plan 2019– 2023, the South African International Marine Institute (SAIMI).

(including marine, naval architecture, electrical and electronics) is supplied through various universities and academic institutions, technical vocational education and training (TVET) colleges, and private providers spread across the country.

The South African International Maritime Institute has made significant strides in training interventions within the maritime sector. Under Initiative 12, SAIMI aimed to train 18,172 learners as artisans, semi-skilled workers, and professionals over five years. As of March 2025, 4,598 individuals had been trained, including 620 artisans. A pilot programme for Yacht and Boat Building qualifications saw 23 out of 30 participants successfully graduate to level 3. Robertson and Caine (Pty) Ltd trained 236 individuals in 2024, with 94 transitioning to permanent employment.

Additionally, the National Seafarer Development Program (NSDP) coordinated by SAIMI has shown promising outcomes. Of 157 cadets contacted, 127 had graduated with Certificates of Competency, and 25 (20%) secured employment in maritime roles. The new skills acquired by seafarers will ensure they remain competitive in a changing operation environment and the that the curriculum responds to new trends. Despite challenges in international placement, SAIMI continues to support cadets through re-examination and placement efforts. These interventions underscore SAIMI's commitment to building a skilled maritime workforce and enhancing employment opportunities.

With renewed emphasis on marine manufacturing, in line with national directives such as Operation Phakisa and this Oceans Economy Master Plan, training in the industry has become increasingly important. In this regard, TVET Colleges have been identified by the DHET as an area underutilised and undercapitalised in terms of providing a skilled workforce in the South African economy. The primary aim of TVET Colleges is to provide qualified people to the various industries fuelling the economy, and as such, TVET Colleges are expected to support the oceans economy sector as a whole and stimulate employment and economic growth through capacitating individuals. However, at present, TVET colleges face poor public perception, primarily due to:

- a complicated mix of programmes and qualifications.
- conflicting and uneven quality assurance mechanisms.
- complex funding systems.
- the lack of or inadequate infrastructure; and
- no criteria for the provision of qualified lecturers.

To achieve this, cooperation between industry players, the business sector and relevant TVET institutions is necessary to tackle the abovementioned skills gap in the industry.⁸⁰

Although progress has been made in transforming the marine manufacturing and repair industry in South Africa, with two (2) of the largest ship repair companies now 100% black-owned, the industry remains male-dominated and women (especially black women), as well as persons living with disabilities, are severely underrepresented.⁸¹ However, there is a challenge of poor coordination and capturing of data to enable the monitoring of performance and progress made in transforming marine-related industries in South Africa. Insight is needed in its transformation achievements to enable viable management and growth. This requires improvement in reporting on these variables by industry in a manner that does not compromise the competitiveness of the industry players in the market and within the acceptable standards, as required by South Africa's competition and anti-trust laws.

In strengthening marine manufacturing skills and capacity to meet industry demands, support innovation, and enable global competitiveness. The following key interventions and initiatives were identified for short-, medium-, and long-term.

Ship Repairer Skills Acceleration

- Review skills audit and legislation impacting marine manufacturing education.
- Accredit training programs and upskill workforce.
- Establish trade centres and centres of specialization.
- Enhance recruitment via ESSA and labour activation programs.
- Develop a database of local manufacturers, certifications, and SMMEs.

Short-Term Training & Capacity Building

- Train university and TVET students in scarce marine skills.
- Support SMMEs through incubation and capacitation.
- Develop lecturers and marine manufacturing qualifications.

Marine Engineering & Design Development

- Create research/testing facilities and innovation hubs.

⁸⁰ TETA, 2019. *Assessment of Selected TVET Colleges to Offer Maritime Programmes*, report commissioned by the Transport Education Training Authority.

⁸¹ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

- Secure funding for research and innovation.
- Enrol and support marine engineering/naval architecture students with bursaries and work placements.
- Invest in infrastructure and equipment for research and skills development.

Increase Training Capacity

- Implement incentive schemes to match graduates with employers.
- Expand apprenticeships and on-the-job training.
- Strengthen industry-education linkages for curriculum alignment.
- Develop holistic funding models for TVET qualifications.
- Ensure availability of simulator training through collaboration and resource investment.

Emerging Skills

- Develop skills for handling alternative fuels.

Expected Outcomes

- Increased skilled workforce for marine manufacturing.
- Enhanced research and innovation capacity.
- Stronger industry-academia partnerships.
- Sustainable funding and infrastructure for training.
- Improved global competitiveness in marine sectors.

5.7 Research, development and technology

Research and development (R&D) in Government is implemented largely in a disjointed manner, whereby each Department operates autonomously and strictly within its own mandate, budget and programs. The result is that there is no current mechanism to co-ordinate a 'marine' or 'maritime' R&D cluster. While specialisation and compartmentalisation are often critical to excellence in science and innovation, greater collaboration and forward thinking is required to improve planning, directing and control for maritime research in South Africa.

Despite this challenge, various research capabilities (researchers and infrastructure⁸²) are available that support current maritime R&D efforts, including funded Research Chairs at various national universities

⁸² Predominantly aimed at post graduate academic institutions and maritime research institutions.

(including in renewable energy), test facilities (such as CSIR wind tunnels and the Overberg Test Range), and maritime technology demonstrators (including for weapon system components for naval combat vessels, harbour surveillance, and panoramic thermal infrared systems developed for the South African Navy by the Institute for Maritime Technology, or IMT, a division of Armscor).⁸³ This demonstrates that the design and development of technologies is as important as research capabilities to enhance South Africa's marine manufacturing and civil engineering capabilities.

In 2020, the CSIR, in partnership with SAIMI developed the Research, Innovation and Knowledge Management Road Map for the South African Maritime Sector, which was formulated as a roadmap for research, innovation and technology development to support Operation Phakisa-Oceans Economy. In this regard, SAIMI has conducted various research and skills audits and facilitated the establishment of research in collaboration with the National Research Foundation (NRF), which itself provides funding and innovative research, technology and innovation platforms for marine-related industries. The CSIR and SAIMI have also collaborated with the universities of Stellenbosch, KwaZulu-Natal and Nelson Mandela Bay (NMU) on various R&D projects, including: conducting long wave and wind studies to improve the stability of vessels during storm surges, boat and ship design, container design, and the development of green energy technologies.⁸⁴ SAIMI is furthermore involved in funding a Marine Robotics Centre, established at NMU in 2020 to provide new knowledge, expertise and support in the areas of robotics, artificial intelligence, modelling, and underwater systems and oceanography.⁸⁵ The latter is particularly important for the offshore oil and gas industry and offshore construction industries.

Stemming from the designation of vessels at 60% local content, the Marine Manufacturing, Maintenance and Repairs, and Associated Services Development Programme (see Section 5.6 above) has been critical in assisting SMMEs to obtain globally competitive standards and accreditations. Of the 14 beneficiaries that have benefited from the programme since 2019, eight (8) projects have been completed, two (2) of which were technology enhancement projects.

Two other areas where attempts are being made to support R&D in the marine industry include the Innovation Campus at the Saldanha Bay IDZ and the Technology Innovation Agency (TIA). Firstly, the Innovation Campus is intended to become a world-class research and development hub to support the

⁸³ Nikki Funke *et al*, 2014. *Reflections on the State of Research and Technology in South Africa's Marine and Maritime Sector*, report published by the Council for Scientific and Industrial Research (CSIR) and funded by the South African Maritime Safety Authority and Department of Science and Technology.

⁸⁴ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

⁸⁵ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

maritime and energy sector. Within the next few years, and in partnership with industry, academia and Government, the Campus is expected to establish capacity and support research to help build South Africa's marine manufacturing and repair capacity, as well as in oil and gas sector, in order for the country to achieve international standing in these areas.⁸⁶ Secondly, TIA, under the Department of Science and Innovation (DSI), was created in 2013 to support Government in funding and stimulating technological innovation in various sectors across South Africa. This includes the commercialisation of biotechnologies and enterprise development (including access to science, engineering and technology services).⁸⁷

5.8 Environmental sustainability

In line with international environmental regulations, principally with the International Maritime Organisation's (IMO) International Convention for the Prevention of Pollution from Ships (MARPOL), local marine manufacturers are steadily investing in technologies to achieve the required reductions in exhaust emissions of carbon dioxide and other greenhouse gases from ship and boat engines. To a degree, South Africa is already a world leader in the electrification of recreational vessels, as exemplified by its internationally recognised electric sailing catamaran yachts.⁸⁸

South Africa has demonstrated its commitment to green hydrogen by launching the Green Hydrogen Commercialisation Strategy (GHCS). According to the Presidency (2023), by 2050, the green hydrogen and related industries could contribute up to 3.6% to South Africa's GDP, while creating an estimated 380,000 jobs in the green hydrogen value chain.⁸⁹ The GHCS acknowledged that ZAR 319 billion (USD 16.8 billion) will be required from 2023 to 2027 to support the development of the green hydrogen sector, including funding for feasibility studies and capital investments in green hydrogen and methanol subsectors.

Although challenges remain, which include the need for large-scale infrastructure investments, workforce reskilling and upskilling (skills development), and the establishment of enabling regulatory frameworks. A 2021 study found that South Africa is well placed to produce zero carbon shipping fuels and

⁸⁶ SBIDZ-LC, 2021. *Corporate Plan 2020-2021*, Saldanha Bay Industrial Development Zone Licensing Company (SBIDZ-LC).

⁸⁷ DSI, 2021. *Technology Innovation Agency: Annual Report 2020/21*, the Department of Science and Innovation (DSI).

⁸⁸ This includes the Voyage 590e, which was recognized with a special award in the 2022 Boat of the Year competition, which is run annually by *Sailing World Magazine*, the world's largest sailing news network.

⁸⁹ 2025 Report: The Pathway to Net- Zero Shipping Socio-Economic Opportunities for South Africa.

components for the global shipping industry.⁹⁰ According to the study, the adoption of zero carbon propulsion technologies at South Africa's ports could attract investment of up to ZAR175 billion in onshore infrastructure by 2030. It suggests, further, that the transition towards greener technologies would greatly contribute towards the country's decarbonisation targets, whilst at the same time acting as a catalyst for South Africa's oceans economy – specifically by opening new export markets, supporting an equitable transition, and creating new jobs.⁹¹

The country's commitment to global de-fossilisation is further demonstrated through the designation of Strategic Integrated Projects (SIPs) in December 2022 by the Department of Public Works and Infrastructure (DPWI). Of these, five projects⁹² have direct maritime applications, focusing on green hydrogen production and PtX fuel solutions for the shipping sector⁹³. The South African maritime sector is particularly well suited to benefit from green hydrogen-derived PtX fuels, such as green ammonia and green methanol, both as export commodities and as low-carbon bunkering solutions for international vessels. With its strategic port infrastructure and renewable energy potential, South Africa is well-positioned to play a dual role: as a supplier of green hydrogen-based marine fuels to global markets, and as a facilitator of domestic decarbonisation within its own shipping industry. Although the transition to green maritime fuels remains in its early stages, with respect to alternative engine production, efforts are underway to develop alternative fuel supply chains, particularly focused on the potential production of green hydrogen and its PtX products.

A key regional organisation in facilitating compliance with MARPOL Annex VI and promoting the uptake of low-carbon technologies in Africa is the Maritime Technology Cooperation Centre for Africa (MTCC-Africa). Through MTCC-Africa, several regional partners have been established throughout the Continent, including the South African Maritime Safety Authority (SAMSA) in Southern Africa. The MTCC-Africa is currently involved in two pilot projects, which have been supported by the IMO and funded by the European Union (EU). The first project looks at adopting energy-efficient technologies and operations

⁹⁰ Ricardo Energy and Environmental Defense Fund, 2021. *South Africa: fuelling the future of shipping: South Africa's role in the transformation of global shipping through green hydrogen-derived fuels*, Global Maritime Forum.

⁹¹ Ricardo Energy and Environmental Defense Fund, 2021. *South Africa: fuelling the future of shipping*.

⁹² Boegoe Baai Green Hydrogen Port (*Northern Cape*); Atlantia Green Hydrogen, Saldanha Bay Industrial Development Zone (*Western Cape*); Hive Coega, Green Ammonia (*Eastern Cape*); Sasolburg Green Hydrogen Production Hub (*Free State*); and SASOL HysihT (*Mpumalanga*).

⁹³ 2025 Report: The Pathway to Net- Zero Shipping Socio-Economic Opportunities for South Africa.

in African ports. The second project focuses on collecting data on fuel consumption and emissions, which has included the participation of SAMSA officials.⁹⁴

5.9 Policy considerations

There is a host of legislation and regulations pertaining to the marine manufacturing and repair industry, including the National Ports Act 12 of 2005, which is primarily responsible for overseeing the activities of the TNPA to ensure compliance with the Act, and the South African Maritime Safety Authority Act 5 of 1998, which, among other things, is responsible for:

- The development and implementation of national and international maritime safety and marine environment protection standards.
- The enforcement of technical and operational standards for all shipping operations in South African waters and for South African ships anywhere in the world, and the promotion of responsible operations, in terms of seaworthiness, safety and pollution prevention; and
- The enforcement of training and competency standards.

In March 2020, the Department of Transport (DoT) gazetted the Merchant Shipping Draft Bill. Among other key objectives, the Bill aims to regulate the design, manufacture, construction, installation, operation, use, handling, alteration, repair, maintenance and conveyance of machinery and safety equipment on vessels in South Africa in line with international standards and best practices. The Bill underwent Parliamentary processes in February 2025, and the Department of Transport presented the draft to the Portfolio Committee of Transport (PCOT) for public hearings.

5.10 Targets and interventions through to 2035

South Africa's marine manufacturing and repair industry is viewed as a highly strategic industry with high economic multipliers, generating employment and positive spin-offs across numerous sub-sectors of the oceans economy value chain. The industry also has cross-sectoral linkages with other marine and non-marine industries, including with aquaculture, architecture, construction, interior design, the aerospace and automotive sectors, information technology, communications and electronics, clothing and textile manufacturing, renewable energy and green technologies.⁹⁵ Thus, the impact of any intervention in this

⁹⁴ MTCC-Africa, *Pilot Project on Voluntary Fuel Consumption Data Collection and Reporting (DCR)*.

⁹⁵ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

industry is expected to have multiplier effects on many other sectors in the South African economy, including component manufacturers, if strategically targeted for spin-off growth.⁹⁶

The tabled below is the sub-sector plan relating to the Marine Manufacturing and Repair sub-sector of South Africa's Oceans Economy. Urgent interventions are needed for the industry and must prioritise the core segments of the local marine manufacturing industry, namely: ship repair, shipbuilding and boat building. In this regard, it is crucial that the TNPA is adequately managed and resourced to (i) support these core segments, underpinned by a strong commercial focus, and (ii) to strengthen its own engineering capacity to undertake priority port infrastructure projects in a timely and efficient manner. Other priority interventions to be considered by Government include:

- Conducting an infrastructure, skills and financing audit;
- Accelerating TNPA facility maintenance and repair works;
- Ensuring adequate financial provisions and enhancement of dedicated project management and other required capacity at the TNPA to ensure effective oversight and execution of all the existing and new facilities upgrades and development;
- Prioritising the detailed design and scoping of projects to ensure that existing and new facilities operate effectively upon project completion;
- Minimising high costs to industry, particularly high rental port charges;
- Evaluating how TNPA can rent out its facilities, such as ship repair workshops, to both emerging repairers and established repairers for more competitive rentals;
- Optimising the landlord-tenant model to better serve the industry;
- Ensuring ship repair facilities are concessioned and leased to private parties;
- Fast-tracking accreditation to ship repairers; and
- Investigating new investment opportunities.

TNPA has lease out water area where private ship repairers are able to instal their floating dock, e.g. Port of Durban has one such privately owned floating Dock. According to Port Development Framework Plan, the Port of Durban is also planning to concession a bigger Dry Dock. Other interventions are aimed at creating market awareness, which will establish a platform for refurbishing aging and building new infrastructure, as well as for increasing health and safety measures. These efforts are expected to

⁹⁶ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

increase local and international demand for ship repairs and marine manufacturing services, which, in turn, will draw from the localisation of value and production chains.

According to the National Ports Act 12, of 2005, TNPA operates a Landlord Port system and grants access following open, transparent, fair and equitable process as prescribed by Section 56 and 57 of the Ports Act. The Ports Regulator of South Africa (PRSA) regularly conducts Global Pricing Comparator studies and Port Benchmarking analysing performance of South African Port system. This is aimed at ensuring that South African Port System remains competitive. The PRSA has also introduced Weighted Efficiency Gain on Operations (WEGO) in the Tariff Application methodology which is aimed at incentivising and disincentivising Port Authority to ensure improved operational port performance.

Continued training and capacity building is prioritised to increase both the competitive and comparative advantages of the industry. The attractiveness of the sector to both local and international investors and clients will also be accelerated by implementing competitive tariffs and fees.

Other interventions will aim to facilitate sustained growth in a manner which balances economic and environmental sustainability. Accordingly, interventions in this phase will focus on expanding marine engineering and design capacity, continuously attracting more investment, accelerating specialised training, establishing a green ship recycling capacity, and reconfiguring the TNPA to manage increased demand and sustainable growth, all under the overall umbrella of an enabling operational and regulatory environment.

The interventions are detailed below

.Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Infrastructure and Equipment	Maintain and upgrade existing marine manufacturing and repair facilities and unlock investment in new and existing port infrastructure by implementing the Ship Repair Strategy.		X		R10 Billion investment Government (20%) and Private Sector Concessions (80%),	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,
			X		Expansion and upgrade of floating docks, graving docks, ship lifts and berth repairs	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry
			X		Catalytic infrastructure initiatives within SEZs approved and developed, such as green ship recycling	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,

.Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
			X		Integrated credible booking system for Ship and Rig repairs is implemented	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,
			X		Access provided to existing and new players in port at competitive rates	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,
			X		Capacity of TNPA facilities and maintenance and repair programme upgraded	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,

.Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
			X		10 x Jib Cranes for the Port of Durban, East London and Cape Town acquired.	Lead: TNPA Support: DOT
			X		New facilities (such as Ship Lifts) to create additional capacity for smaller fleet developed.	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,
			X		Expanded dry docks to accommodate larger ships, to meet market demands	Lead: TNPA Support: DOT, Shipbuilding and ship repair industry, the dtic ,
			X		Marine engineering workshops augmented.	Lead: TNPA Support:

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
						DOT
			X		Business unit to support an integrated approach centralised.	Lead: TNPA Support: DOT
Skills and Capacity	Strengthen marine manufacturing skills and capacity to meet industry demand, support innovation, and enhance global competitiveness through targeted interventions and initiatives.	X			Ship repairer skills accelerated and strengthened	Lead: DOT Support: SAIMI, SETAS, Tertiary institutions,
		X			Short-term training and capacity building enhanced	
		X			Marine Engineering and Design skills and capacity enhanced	
		X			Increased training capacity support	
Adequate Health, Safety	Maintain compliance with Health and Safety Requirements and ensure that port facilities	X			Maintained incident-free environment,	Lead: DOT (SAMSA) Support:

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
and Environment	and infrastructure are maintained and repaired to enhance safety.					DOT (TNPA), DEL, Industry
Enhance Market Growth and Access	Increase local demand and supply for marine manufacturing and repair components, equipment, and services by: Incentive scheme for local manufacturing through support for participation in international boat shows.	X			Effective incentive scheme operational	Lead: the dtic (IDC) Support: Provincial development agencies,
	Continue the implementation of a public procurement programme and accelerate the implementation of the localisation programme	X			Public procurement and localisation programs implemented	Manufacturers, Financial institutions
	Increase market awareness and investment attraction through: Collaboration on market awareness and investment attraction initiatives promoting the value proposition in target markets and reducing market restrictions for South Africa (duplication), manufacturing	X			Increased investment and trade within the manufacturing and repair industry	Lead: DOT Support: the dtic, DIRCO, Industry, National Treasury (DBSA),

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	and repair services globally and regionally.					Industry bodies and Associations
	Leveraging on the dtic planned yearly programmes including exhibitions, trade shows, and any other identified programmes (including exhibitions, trade shows etc) arranged by DIRCO, industry associations, and other key stakeholders.	X			Strengthened market awareness to attract investment	
	Increase local component manufacturing as well as certification of local component manufacturing products by: Accreditation and certification of local components and technologies	X			Local design standards accredited	
		X			Increased volumes of accredited components produced	
		X			Increased number of firms accredited in terms of new design standards	
		X			Increased participation of the maritime industry	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	Providing support to local component manufacturers for the marine industries to improve price competitiveness				in the localisation program.	
		X			Increased local content of certified components	
	Infrastructure development projects in Richards Bay IDZ (RBIDZ) facilitated:		X		Board-approved investment and completion of new facilities in RBIDZ: - Electrolyte Manufacturing and Battery components for Vanadium redox Flow batteries, - TiO2 Pigment Production for Export, - Marine Paints Production,	Lead RBIDZ Support TNPA

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					- Petroleum products storage and processing, - Edible Oil Refinery, - Industrial Hose Manufacturing, and - Caustic Soda Plant	
Accelerated Inclusion and Transformation	Marine manufacturing and repair subsector to adopt a deliberate and targeted approach to absorb women, youth, and persons living with disabilities in all skills areas required in the sector, taking into consideration safety for employment of persons living with disabilities onsite and on board the ships.	X			Improved implementation of BEE Sector codes: measured with Increased number of women, youth, and rural people participating in the value chain of the sector	Lead: DOT Support: WOMESA, the dtic, DWYPD (NYDA), BEE Commission, DHET (SAIMI), DFFE, Industry, DSBD (SEFA, SEDA)
	Review current industry transformation interventions to replicate and upscale the implementation of the existing successful intervention.		X		Transformation interventions upscaled	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Research, development and Innovation technology transfer, and localisation	Accelerate commercialisation of technologies emanating from research and innovation programmes developed by industry and research institutions, by promoting the availability of all Maritime Research and Development facilities in South Africa by means of a brochure of resources and providing direct government funding of R&D, tax incentives for R&D, protection of intellectual property, and forming cooperative relationships between universities and the private sector		X		Increased production in the sector, resulting from Increased commercialisation of innovations and prototypes	Lead: DSTI (TIA, CSIR, SEON) Support: the dtic, DOT (SACAA, SAMSA), DMRE (Council for Geo-Sciences), National Treasury (DBSA), DSBD (SEDA, SEFA), DFIs (IDC, ECIC, NEF) Institutions of Higher Learning, DHET (SAIMI), DFFE, AISI, SAAMA, SAIMENA, Universities, Industry
	Establishing local testing and accreditation facilities		X		Increased number of operational research and testing facilities	
	Establish technology demonstration facilities		X		Interdepartmental Oceans Economy Research Development	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	by creating an interdepartmental Oceans Economy Research Development and Innovation structure and establishing a research, development, and innovation knowledge pool database				and Innovation structure established and operational	
	Establish commercialisation offices at local universities for the sector		X		Increased number of qualified commercialisation officers	
	Develop an SMME Research and Development Programme		X		SMME Research and Development Programme developed and implemented	
	Develop research and innovative ways to reduce the cost structure for the local manufacturing industry to increase volumes of locally manufactured components penetrating the export market		X		Cost of local manufacturing reduced, and production volumes produced	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	Continuing process to map the South African ocean bed		X		The South African ocean bed mapped out	
	Undertake joint government and industry initiative to deepen the local marine component manufacturing base, leveraging on existing manufacturing capacity and capabilities to reduce local marine manufacturing and repair sub-sector reliance on imported components		X		Increased production of locally manufactured marine components	
	Identify opportunities in key markets to export locally manufactured components within the marine-related sectors on the continent and facilitating local content requirements to be matched by existing component manufacturing capability in the country		X		Increased exports of locally manufactured components in the marine -related sectors	
	Deepening the manufacturing base and developing the supply of local marine components, as well as ensuring that		X		Increased number of firms accredited in terms of new design standards	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	local component manufacturers have the required standards and accreditations to satisfy the demand					
	Creating an inter-sector collaboration platform across various manufacturing sectors to have standardised designs for components where feasible, to create critical mass for sustainability of local component manufacturing operations		X		Standardised designs for components in various manufacturing sectors	

SUB-SECTOR PLAN

MARINE TRANSPORT



6. Marine Transport Sub-Sector Plan

Marine transport can be defined as “an integrated system that involves the design, construction, operation, management, servicing and maintenance of merchant, leisure and other ships in the service of seaborne trade, conducting offshore operations and transporting people and cargo by sea and inland waterway”.⁹⁷

This section of South Africa’s Oceans Economy Master Plan presents a sub-sector plan for the marine transport industry. The plan covers the following areas:

- A review of the global industry;
- A review of the national industry;
- Current interventions;
- Challenges;
- Opportunities;
- Skills and transformation;
- Research, development and technology;
- Environmental sustainability;
- Policy considerations;
- Targets and interventions through to 2035.

6.1 Global sub-sector review

In terms of monetary value, the global fleet reached \$1.37 trillion in 2024 with the top 10 owners accounting for about two-thirds of the total value. Greece ranked first, followed by China, Japan and United States⁹⁸. Over half of the world ship capacity is owned by owners in developed economies while most of the capacity (76 %) is registered under flags of developing economies, Panama ranking first, followed by Liberia, Marshall Islands and the Bahamas⁹⁹.

⁹⁷ DoT, 2017. *Comprehensive Maritime Transport Policy (CMTP) for South Africa*, The Department of Transport (DoT), Pretoria.

⁹⁸ UNCTAD, 2024. Review of Maritime Transport 2024.

⁹⁹ UNCTAD, 2024. Review of Maritime Transport 2024.

At the beginning of 2024, the global marine transport fleet totalled over 108,000 ships of 100 gross tons (GT)¹⁰⁰ and above. Bulk carriers accounted for over 42% of the fleet capacity, followed by oil tankers (28%), container ships (14%) and other types of ships (11%) (Clarkson's Research, 2024). Since the early 2000s, more of the world's cargo has been carried in so-called 'mega-container ships' i.e. those with a container capacity greater than 10,000 twenty-foot equivalent units (TEU)¹⁰¹, and between 2011 and 2021 their proportion of carrying capacity rose from 6% to almost 40%. According to the United Nations Conference on Trade and Development (UNCTAD), "these larger ships have been part of broader corporate strategies to pursue economies of scale", although at the same time, "this has resulted in excess supply – 'over-tonnaging' – in the world's major liner routes, with greater pressure on infrastructure and on logistics at ports".¹⁰² As of 2024, the top three ship-owning countries, in terms of both dead-weight tons and the commercial value of their fleets, were Greece, China, and Japan, accounting for around 40% of the world fleet's tonnage and 34% of the value of the global fleet¹⁰³.

In terms of ship registration, over half of the world ship capacity is owned by owners in developed economies while most of the capacity is registered under flags of developing economies. Developing economies remain the main providers, which tend to offer attractive business incentives. The top 35 registers accounted for over 93 % of the global fleet value; Panama has the world's largest ship's registry, followed by the Marshall Islands and Liberia, and the three account for around 37% on global ship registration.¹⁰⁴ According to UNCTAD 2024, Vietnam and Russian Federation maintained their appearance in the top 35 nations for ship registration; and in terms of value, a small share of owners from Nigeria (0.4%) and Brazil (0.6%) appearing in the top 35.

Developing countries, including Asia, account for around two-thirds of global trade, representing 60% of global goods loaded (exports) and 70% of goods discharged (imports).¹⁰⁵ Africa, however, accounts for just 2% of global trade, while only 17% of African exports are intra-continental, compared with 59% for

¹⁰⁰ Gross tonnage (GT) is a function of the volume of all of a ship's enclosed spaces, from keel to funnel.

¹⁰¹ Twenty-foot Equivalent Unit (TEU or teu) is the conventional measurement used in the maritime transport industry to determine cargo capacity for container ships and terminals, based on the length of a standard 6.1m intermodal container.

¹⁰² UNCTAD, 2021. *Review of Maritime Transport 2021*, United Nations Conference on Trade and Development, United Nations Publications: New York.

¹⁰³ UNCTAD, 2024. *Review of Maritime Transport 2024*, United Nations Conference on Trade and Development, United Nations Publications: New York

¹⁰⁴ UNCTAD, 2024. *Review of Maritime Transport 2024*, United Nations Conference on Trade and Development, United Nations Publications: New York.

¹⁰⁵ UNCTAD, 2024. *Review of Maritime Transport 2024*, United Nations Conference on Trade and Development, United Nations Publications: New York.

Asia and 68% for Europe.¹⁰⁶ In terms of global maritime trade volumes, Asia retains the biggest share (41%), followed by the Americas (23%), Europe (15%), Oceania (14%), and Africa (7%). With nearly two-thirds of world container port throughput, Asia is also recognised as the global hub for container port traffic, followed by Europe (14%), North America (7.5%), Latin America and the Caribbean (7.2%), Africa (4%), and Oceania (1.6%).¹⁰⁷

In 2023, economic growth generally exceeded expectations in several developed and developing economies. Seaborne trade growth in ton-miles, measuring distance-adjusted trade volumes, outpaced growth in tons in 2023, like in 2022. The total ton-miles¹⁰⁸ reached 62,037 billion in 2023, representing a 4.2% increase over 2022. Growth was driven by longer-haul voyages across all segments, prompted by disruptions due to the war in Ukraine, the disruptions in the Red Sea and reduced water levels in the Panama Canal, which led to longer ship journeys and distances.

Pre-pandemic forecasts made by UNCTAD predicted an annual average growth rate of 3.5% for international seaborne trade between 2019 and 2024. UNCTAD's latest report on international shipping, the Review of Maritime Transport 2024, shows that maritime trade volumes reached 12,292 million tons in 2023, marking a 2.4% increase after contracting in 2022. This growth was driven by growth in the global economy, which averted a predicted recession and grew by 2.7 % despite the most significant monetary tightening in decades¹⁰⁹.

Against the backdrop of the global economic revival, UNCTAD expected world maritime trade to recover by 4.3% by the end of 2021, with growth projected to expand at an annual rate of 2.4% between 2022 and 2026. Maritime trade volumes reached 12,292 million tons in 2023, marking a 2.4 % increase after contracting in 2022. This growth was driven by growth in the global economy, which averted a predicted recession and grew by 2.7 % despite the most significant monetary tightening in decades¹¹⁰. In 2023, economic growth generally exceeded expectations in several developed and developing economies. In China, economic recovery was slightly slower than predicted, yet the economy significantly bolstered

¹⁰⁶ Caroline Kende-Robb, 2021. *6 reasons why Africa's new free trade area is a global game changer*, World Economic Forum (WEF), 9 February 2021.

¹⁰⁷ UNCTAD, 2021. *Review of Maritime Transport 2021*, United Nations Conference on Trade and Development, United Nations Publications: New York.

¹⁰⁸ Maritime trade in ton-miles measures “maritime transport work”, that is, how far one unit of maritime cargo in tons travels from origin to destination. “Transport work intensity” (TWI) is a measure that considers the value of the trade carried and, at the same time, the distance travelled by a unit of maritime cargo.

¹⁰⁹ UNCTAD, 2024. *Review of Maritime Transport 2024*.

¹¹⁰ UNCTAD, 2024. *Review of Maritime Transport 2024*.

overall global economic growth. The economy of the United States of America was resilient, avoiding an anticipated downturn (DESA, 2024)¹¹¹.

A positive outlook for seaborne trade amid increased risks for 2024 and beyond. In the period 2025 – 2029, UNCTAD expected total seaborne trade to grow at an annual average of 2.4 % and containerized trade by 2.7 %. This forecast is based on projected gross domestic product (GDP) and merchandise trade growth of 2.7 and 3 %, respectively (DESA, 2024). Although prospects for maritime trade remain positive, they are dependent on how several downside risks continue to unfold, including the war in Ukraine, heightened geopolitical tensions and economic uncertainties. Increased geopolitical tensions may trigger new supply shocks in global commodity markets. Notably, oil and grain shipping routes in the Suez Canal, the Red Sea and the Black Sea may be affected, leading to potential spikes in energy and food prices¹¹². Trade involving developing countries, including South–South trade, is experiencing robust growth, outpacing trade involving developed countries. Sectors such as green energy and artificial intelligence related products are expanding, supporting trade growth (UNCTAD, 2024g).

Africa's response to rising global protectionism, where free trade and economic integration are increasingly questioned, has been to turn towards continental leadership and collective action in the form of the African Continental Free Trade Area (AfCFTA). The pact, launched in January 2021 and implemented in three phases,¹¹³ will create the largest free trade area in the world (in terms of the number of countries participating), connecting over 1.3 billion people across 55 countries with a combined GDP valued at around ZAR51 trillion. Its primary purpose is cutting red tape, by eliminating 90% of tariffs, focusing on outstanding non-tariff barriers, and creating a single market with free movement of goods and services.¹¹⁴ AfCFTA is poised to play a significant role for marine transport industries across the Continent, given that Africa relies heavily on ships and ports to service its inter-continental trade.

Transitioning from the use of fossil fuels to renewable energy sources is on the agenda of African leaders and policymakers. In this context, countries across the continent are exploring the potential to harness green hydrogen to meet energy needs and broaden the energy mix. Coastal countries in particular, possess significant potential in this regard, not only due to water and energy availability, but also due to

¹¹¹ DESA (2024). World Economic Situation and Prospects as of Mid-2024

¹¹² UNCTAD, 2024. Review of Maritime Transport 2024.

¹¹³ The AfCFTA will be implemented in three phases: Phase 1 covers the trading of goods and services; Phase 2 addresses investment, competition policy, and intellectual property rights; and Phase 3 negotiations will focus on e-commerce after a year of capacity-building.

¹¹⁴ Caroline Kende-Robb, 2021. *6 reasons why Africa's new free trade area is a global game changer*.

the existence of port infrastructure. The energy requirements of industries as well as the shipping sector, are expected to lead to a substantial demand for hydrogen in the vicinity of ports. African countries have a range of opportunities along the value chain of green hydrogen development¹¹⁵. These include generating renewable energy and producing green hydrogen and handling its transportation, storage and application. Green hydrogen could be produced from onshore and offshore wind farms and could be imported or exported through ports. Europe is expected to be a main importer of green hydrogen from Africa, particularly from North Africa, by 2050 (European Commission, 2023).

Globally, the maritime industry is already embracing green hydrogen as an alternative fuel in marine engines. In 2023, Namibia and Hyphen Hydrogen Energy agreed on a deal to produce and export up to 300,000 tons of green hydrogen per year (Voice of America, 2023), and similar projects were expected in other African countries such as Angola, Egypt, Morocco etc. In South Africa various feasibility studies are underway to explore the requirements for establishing green marine bunker fuel value chains at the ports of Boegoe Baai and Saldanha. Both ports have the potential to develop into green hydrogen hubs, each offering a unique value proposition. In strengthening regional alliances to encourage use of Green Hydrogen, as well as trade within and between countries, a partnership “African Green Hydrogen Alliance”, was formed by six coastal countries, namely, Egypt, Kenya, Mauritania, Morocco, Namibia and South Africa (Green Hydrogen Organisation, 2024).

With regards to the multilateral instruments that govern the global marine transport space, some of the key international regimes include the: United Nations Convention on the Law of the Sea (UNCLOS); the International Convention for the Safety of Life at Sea (SOLAS); the Marine Environment Protection Convention (MARPOL); and several regulatory legal instruments of the International Maritime Organisation (IMO). Between these and other institutions, there have emerged a number of conventions and protocols dealing with compliance to measures introduced to deal with, amongst other things, pollution prevention, security, and safety of navigation, and surveillance.¹¹⁶

6.2 South African sub-sector review

South Africa’s marine transport industry includes freight and cargo handling across the value chain, including in South African ports, and ocean transportation (the movement of goods by ships, particularly where this is conducted on ships that are registered in South Africa, that operate in South African waters

¹¹⁵ UNCTAD, 2024. Review of Maritime Transport 2024.

¹¹⁶ DoT, 2017. *Comprehensive Maritime Transport Policy (CMTP) for South Africa*, Department of Transport.

and/or are owned or operated by South Africans). Both the CMTP and the Merchant Shipping Bill are explicit for South Africa to transcend beyond providing shipping services to that of being a ship ownership and registration to serve national and regional economy. South Africa should capture the growing Africa's coastal trade in providing shipping services to build a sustainable and competitive maritime sector, driving economic growth, job creation, and ensuring national security. There are opportunities associated with the African Continental Free Trade Area which aims at accelerating intra-African trade and boosting Africa's trading position in the global market.

Over the years, South Africa has generated an average of just below 300 million tons of global seaborne trade activity. This constitutes just over 1% of the total global seaborne trade.¹¹⁷

In 2025, South African commercial ports recorded a slight increase of 9 342 vessel arrivals (compared to 9 201 vessels in 2024). Oceangoing ships accounted for 7 716 of port calls, with the balance comprising coastwise vessels (96), foreign fishing vessels (389), South African fishing trawlers (572), and miscellaneous vessels, such as tugs, search and rescue boats, naval vessels, barges and yachts (575). In the same year, the South African port system handled just under 220 million tons of dry bulk, liquid bulk and breakbulk cargo (up from 211 million tons in 2024) and 899 094 vehicles (up from 779 601 in 2024)¹¹⁸.

For most South African maritime trade, the choice of carrier lies with the foreign counterparty. Most bulk commodity exports are shipped free on board (FOB) while imports are exclusively cost, insurance and freight (CIF) or similar terms.¹¹⁹ The bulk of exports – around 95% – are in fact outsourced to foreign-flagged merchant ships and the estimate cost to the country is believed to be in excess of ZAR45 billion per year.¹²⁰ Even coastal trade is moved on foreign vessels. This limits South African influence in the international trade value chains, where the choice of carrier resides onshore, for various reasons (principally related to competitiveness and fleet availability). South African exporters and importers, as well as those involved in coastal shipping, have effectively insourced the services of foreign owners operating foreign-registered ships, which are crewed by foreign seafarers. In short, the small size of its cargo-carrying vessels means that South Africa does not have adequate capacity to carry its own trade to market, move its own trade around the coast, or support its own offshore strategic energy production installations.¹²¹ This creates an economic imbalance, which if not addressed, will continue to facilitate the

¹¹⁷ DoT, 2017. *Comprehensive Maritime Transport Policy (CMTP) for South Africa*.

¹¹⁸ <https://www.transnet.net/SubsiteRender.aspx?id=24332214>, TNPA Port Statistic

¹¹⁹ FOB is where a foreign buyer selects the carrier, while CIF is where a foreign seller selects the carrier.

¹²⁰ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹²¹ DFFE, 2020. *Towards a South African Oceans Economy Master Plan*.

loss of much needed revenue, economic opportunities and related jobs for the South African marine transport industry and beyond.¹²²

Even shipping companies with roots in South Africa, including Safmarine and Grindrod Shipping, have preferred foreign registers and have externalised their shipping operations – and have since 2003 become largely or wholly foreign owned. Prior to the registration of the Cape Orchid bulk carrier in 2015, South Africa’s previous merchant vessel registration was in 1989, and the last locally flagged merchant vessel was deregistered in 2009. South Africa has since 2015 attracted twelve (12) merchant vessels to the register¹²³ – four of which are internationally trading bulk carriers and the others operating in and around the ports. This somewhat insignificant tonnage on the national ship registry limits seafarer job creation and training prospects and also undermines South Africa’s global maritime influence¹²⁴ and its aspirations to be a ship owning and ship operating nation.

With regards to port operations, international trade is one of the vital facets of the South African economy, with exports contributing approximately 30% to GDP in 2020.¹²⁵ Ports play a crucial role in South Africa’s transport system and its economic development, given that the bulk of trade is seaborne, which moves through a system of nine (9) commercial ports spread along the country’s coastline. Each port has a natural hinterland with a defined market that partly drives the nature of services, facilities, types of cargo handled at each port, including complementarity with inland ports, such as City Deep in Gauteng. The relative geographic locations, capacities, and specialisations of the ports are zoned into the following three regions:

- Western region: Port Nolloth, Saldanha, Cape Town and Mossel Bay;
- Central region: Port Elizabeth, Ngqura (Coega), and East London; and
- Eastern region: Durban and Richards Bay.¹²⁶

These commercial ports are operated on a system-wide basis and are not inter-competitive. In other words, they are complementary in nature, with each port serving a different purpose to both the immediate

¹²² DoT, 2017. *Comprehensive Maritime Transport Policy (CMTP) for South Africa*, Department of Transport, Pretoria.

¹²³ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹²⁴ IMO influence is largely a factor of tonnage on the register and active seafarer base

¹²⁵ Of the nine ports managed by the National Ports Authority, eight are considered commercial ports. Port Nolloth is the ninth port and is not part of the commercial ports system. See: NPA, 2021. *Ports Sector Review: A five-year regulatory review of the South African port system developed by the Ports Regulator of South Africa 2020/21*, National Ports Regulator.

¹²⁶ DoT, 2011. *National Transport Master Plan (NATNAP) 2050*, the Department of Transport, Pretoria.

hinterland, as well as the economy as a whole.¹²⁷ Together, they handle around 190 million tons of dry bulk cargo, 55 billion litres of liquid bulk, and over a million cars every year.¹²⁸ They also make up around 76% of all containerised traffic in southern Africa.¹²⁹ Durban is Africa's busiest port, currently handling 90 million tons of cargo per year (see Table 4 below). The Port of Ngqura, located near Gqeberha, is South Africa's newest deepwater container port (commencing operations in 2009) and has been earmarked as a future trans-shipment hub, due to its strategic location and depth of its container port, which is the deepest in the country. Boegoebaai, near the Northern Cape town of Alexander Bay, has also been identified as a potential site for the development of a new commercial port. In addition to South Africa's commercial ports, there are also several small harbours dispersed along the coast, the majority of which serve as proclaimed small fishing harbours. In terms of the value chain, port operations support economic activity in almost all sectors of the industry.

Historically, communities adjacent to proclaimed fishing harbours have remained economically excluded from the marine value chain. The Small Harbours Development Programme responds to this exclusion by revitalising existing harbour infrastructure and exploring new small harbours and related facilities. A national framework and development guidelines have been developed and approved to guide the identification and development of new harbour projects, ensuring balanced social, economic, environmental, and technical considerations. The Department of Public Works and Infrastructure has implemented a Repair and Maintenance Programme (RAMP), investing approximately R500 million to improve infrastructure and operational capacity across the harbours. Beyond this, the Small Harbours Development Programme aims to upgrade existing sites, establish new harbours in underserved coastal provinces (Eastern Cape, KwaZulu-Natal, and Northern Cape), and align with the NDP's objectives of job creation and economic growth.

Players in the international shipping value chain, over and above those that operate as part of the ports value chain, include:

- Exporters and importers;
- Bunkering services (shore-to-ship and ship-to ship);
- Shipping lines/carriers;
- Outside port limits (OPL) services;

¹²⁷ National Ports Regulator, 2021. *Ports Sector Review*.

¹²⁸ Invest SA, 2016. *South Africa's Oceans Economy*.

¹²⁹ Francois Botes, 2018. *Strengthening Africa's gateways to trade: An analysis of port development in sub-Saharan Africa*, Price Waterhouse Coopers (PwC), April 2018.

- Shipping charterers and agents;
- Crewing agents; and
- Port terminal operators.¹³⁰

Offshore bunkering services bring about much needed ship transport business to South Africa, with a total of five (5) bunker operators in the country, mainly centred on the coastline around Algoa Bay near the ports of Port Elizabeth and Ngqura.¹³¹ Bunkering operations in the Eastern Cape have recorded significant growth and value add to the industry, with around a hundred ships being serviced a month since 2017.¹³² However, there is a general lack of adequate infrastructure and services to capitalise on the potential for growth in this segment, which is often constrained by irregular and unreliable refinery supply. This means that much of the country's bunker products are imported.¹³³ Bunkering in South Africa has also been the subject of much environmental resistance, due to the real risk of oil spillage and potential to inflict serious damage to marine ecosystems. To mitigate these risks, as well as to promote the employment of South African seafarers and developing the South African ship register, the South African Maritime Safety Authority (SAMSA) published new bunkering and ship-to-ship transfer codes of practice currently in force since 2024. New Bunker Code and South African Revenue Services Rules published in 2024 to facilitate compliance with respect to offshore ship to ship bunkering. The DFFE has developed and gazetted (2025), a new set of regulations with respect to environmental management of the bunkering sites.

South Africa's commercial seaports are managed and controlled by the Transnet National Ports Authority (TNPA). The TNPA provides a variety of maritime services, including the implementation of safety and security measures, dredging, aids to navigation, vessel traffic services and the provision of tugs, pilot boats, helicopters and other services and facilities for the navigation and berthing of vessels in South African ports.

Terminal operators and other maritime players are excluded from this mandate. The majority of terminals (Containers, Automotive and Dry Bulk (iron ore), Manganese and Chrome magnetite), amongst others, are instead operated on a common user basis by Transnet Port Terminals (TPT), a business division of

¹³⁰ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹³¹ SAMSA, 2021. *South Africa's new bunkering and ship-to-ship transfer codes of practice out for public comment*, South African Maritime Safety Authority (SAMSA), 8 November 2021.

¹³² Mia Breytenbach, 2017. 'Eastern Cape sets sights on becoming Africa's leading fuel bunkering centre', *Engineering News*, 12 May 2017.

¹³³ George Collard, 2021. 'South Africa disorder to shift bunker demand', *The Argus*, 14 July 2021.

Transnet, which is the main terminal operator within the ports sector.¹³⁴ It must be noted that the Liquid Bulk sector is largely operated by the private sector. New Liquefied Terminals (LNG) are also being developed. Recently in 2024, Port of Richards Bay signed a new Terminal Operator Agreement with a consortium of Vopak (Private player) and Transnet Pipelines. This is not only bringing diversification to Port of Richards Bay, which has largely been handling Dry Bulk commodities, but it brings about Port expansion through diversification of commodities to take advantage of its deep waters able to handle large vessels.

With the establishment of Operation Vulindlela in 2022, one of the 5 key objectives was to facilitate competitive and efficient freight transport through introduction of private sector participation in container terminals, to crowd in investment and improve the efficiency of port operations. In January 2026, a new PSP transaction for the largest Container Terminal in South Africa, Port of Durban Pier 2, was approved. Effectively allowing private sector to control the operations of the Terminal now known as Durban Gateway Terminal. The Richards Bay Dry Bulk Terminal is expected to follow, as it has started a process seeking a new partner to invest and operate its Dry Bulk terminal.

Because most of South African exports are transported by foreign-flagged vessels, it is difficult to measure the exact contribution of seaborne transport to the economy in value terms. At the same time, there is a lack of accurate statistics to measure the economic contribution of cargo and maritime-related services.¹³⁵ Nevertheless, recent figures from the Port Regulator indicate that South Africa's commercial ports generated a total of ZAR14.7 billion in revenue in 2025, up from ZAR11.9 billion in 2020.

The Container Port Performance Index (CPPI) measures the time container ships spend in port, making it an important point of reference for stakeholders in the global economy and for the sustainable development of ports. A timely turnaround of container ships is crucial to keep logistics costs low and supply chains efficient, ensuring that ports remain resilient catalysts for development. Time-efficient container ports enable ships to achieve fuel and emissions savings, making the index a key contributor to shipping decarbonization efforts. The fifth edition of the CPPI, jointly developed by the World Bank and S&P Global Market Intelligence, provides a comparative global assessment of container port performance. A seemingly earlier recovery was partially reversed in 2024. The resurgence of stress in

¹³⁴ National Ports Regulator, 2021. *Ports Sector Review*.

¹³⁵ PMG, 2020. *SAMSA on Maritime Sector Transformation*, presentation to Select Committee on Transport, Public Service and Administration, Public Works and Infrastructure, Parliamentary Monitoring Group (PMG), 14 October 2020.

global maritime supply chains, stemming from the Red Sea crisis and ongoing climate-related disruptions at the Panama Canal, triggered new operational inefficiencies. Rerouted shipping via the Cape of Good Hope and reduced transits through the Panama Canal led to schedule unreliability and increased port congestion. Africa's traditionally strongest ports – all located in South Africa – performed dismally during the data period, emerging as the least efficient globally. Durban was the least performing of all ports worldwide (at position 403), with Ngqura (Coega) and others placing marginally higher in the bottom 10. The primary reason for this was the excessive amount of time ships spent queuing to get to the berth, a bottleneck often caused by equipment shortages, poor scheduling, and landside congestion, rather than slow work once they began loading or unloading. According to the report, these structural and operational challenges continue to undermine South Africa's trade competitiveness. Despite the low overall rankings for South Africa, the Port of Cape Town was celebrated as one of the strongest global improvers, dramatically boosting its CPPI score in 2024. These gains were directly linked to targeted investments, improved digital links with customs and logistics partners, and better operational scrutiny of crane deployment and handling hours. Coega also showed significant recovery, reflecting its successful adaptation to the increased traffic diverted around the Cape of Good Hope due to the Red Sea crisis.

- minimal use of rail infrastructure;
- bottlenecks in the road and rail interface;
- constraints on land for container stacking,
- above average anchoring times for containers;
- congestion at port entrances and terminals; and
- inefficiencies which increase waiting time.¹³⁶

In 2024, the government published the Rail Network Statement, and Transnet has further established Transnet Rail Infrastructure Manager as a step towards opening access to the network to other operators to address rail inefficiencies and underinvestment in rolling stock, which has seen a shift of cargo from rail to road, resulting in port congestion. The latest available data from the TNPA confirms that port cargo volumes have increased to just under 300 million tons from the low volumes in 2020 during the COVID-19 pandemic (see Table 4 below).

¹³⁶ National Ports Regulator, 2021. *Ports Sector Review*.

Table 4: Total Weighted Cargo (million) tons

PORT	2021(mt)	2022 (mt)	2023 (mt)	2024 (mt)	2025 (mt)
Port Nolloth	-	-	-	-	-
Saldanha Bay	66	59	64	64	64
Cape Town	17	20	17	17	19
Mossel Bay	0.9	1	1	1	1
Port Elizabeth	12	14	15	15	16
Ngqura	15	16	15	18	20
East London	1.6	3	3	3	2
Durban	79	91	90	87	90
Richards Bay	84	81	78	83	88
Total all ports	278	285	284	287	299

(Source: TNPA, 2026)

6.3 Current interventions

According to the Transnet Ports Authority Port Development Framework Plans, which seek to increase capacity as well as optimisation of latent capacity for container handling and enhancements to the tank farm terminal at the Port of Durban, which handles petroleum and diesel products for transportation through the new multi-product pipeline to Gauteng. In 2024, the Minister of Transport approved the Section 79 application by the petroleum and chemical players operating in the Island View Precinct in the Port of Durban in line with the National Ports Act 12 of 2005. This approval paved the way for the Transnet National Ports Authority to sign new Terminal Operator Agreements, bringing certainty for security of tenure to existing operators and attracting the much-needed investment to modernise the operations and improve efficiencies. The approval also introduced the State-Owned Company to operate in the Island View Precinct, to ensure State Security of supply and also increase refining capacity in the country following closure by the international players.

Additional planned investments as part of Transnet's strategy to accommodate larger vessel sizes include:

- Maydon Wharf berth upgrade phase 1 completed with phase 2 at feasibility stage;¹³⁷

- The deepening of three berths at the Durban Container Terminal;¹³⁸
- The deepening and lengthening of the north quay at Durban, which is set to boost the port's annual container handling capacity.
- Deepening and widening of Port of East London to accommodate larger vessels.
- Construction of manganese terminals at Ngqura and Saldanha Bay; and
- Construction of a tank farm berth at Ngqura.¹³⁹
- Increase of Container capacity in the Port of Cape Town from 1m TEU's to 1.4m TEU's through increasing stacking capacity, rail handling capacity and truck staging area as major to decongest the port.

6.4 Challenges

The marine transport industry faces a number of national and global challenges impacting performance and growth across the value chain. With regard to port operations, several reports and studies, such as the National Transport Master Plan (NATMAP) 2050, have concluded similarly that a key challenge constraining the growth of the industry is the inefficiency of South Africa's commercial port system.¹⁴⁰

Other identified challenges include:

- Port costs and hinterland transport costs that hinder the operating of emerging manufacturers and other companies in the country;
- Capacity constraints and port congestion at various port terminals;
- The impact of port freight handling and storage on the congestion and expansion of city centres;
- Under-investment in port infrastructure;
- A lack of equipment and skills;
- High berth occupancy rates;
- Limited land areas especially for container facilities;
- The need for the TNPA and TPT to operate in a competitive environment to increase the utilisation of available capacity, improve efficiencies and ensure greater accountability.

Port operations are also impacted by the local influence of foreign carriers on container trade. That is, South Africa relies on its access to the global intermodal networks and availability of large, foreign-owned

¹³⁸ This project was not originally part of the projects identified under *Phakisa* but was subsequently added after 2014.

¹³⁹ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹⁴⁰ See, for example: DoT, 2011. *NATMAP 2050*; Francois Botes, 2018. *Strengthening Africa's gateways to trade*; Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*

liner vessels that call at South African ports as part of the larger east-west trade routes. Similarly, for vehicle transport, South Africa plugs into the shipping networks that support a global supply chain. For the container trade and fruit export trade, South Africa's participation ceased when Safmarine was sold to a major European carrier in 1999. This raises the need to increase the level of South African involvement in these liner trades and maintain close scrutiny of operating practices, to increase the competitiveness of the sector and its contribution to the broader South African economy.

While the legal position of these issues may be relatively straightforward for international shipping, local and coastal operators have suggested that legislation should be amended so that they can also benefit from these dispensations, and their seafarers should be exempt from Pay-As-You-Earn (PAYE) in the same way as seafarers on international ships.

Secondly, as with many developing economies that lack scale in their trade flows and/or a national merchant fleet, for the majority of South Africa's maritime trade, the selection of carrier lies with the foreign counterparty. This arrangement limits the country's ability to influence the cost, reliability or quality of its value chain. Similarly, the ability of the country to use those trade flows to facilitate local industry development or societal impact (e.g. transformation) is negligible. Thirdly, there are also challenges around funding. South African funds are often not competitive when financing ship acquisition and shipbuilding programmes. Funders typically expect long-term contracts to underpin the debt service cash flows. However, freight owners may only offer shorter-term contracts. Fourthly, delays in the operationalisation of the New Customs Act currently create legislative uncertainty and the finalisation thereof requires priority attention.

Apart from the abovementioned domestic challenges, South Africa's marine transport industry faces several global challenges which are affecting all areas of the value chain. Key among these include:

- the cost of ocean transport, given that developing countries typically pay 40-70% more for ocean transport than developed countries;
- port delays and demurrage;
- changes in global trade patterns that may reduce maritime traffic around the Cape (caused by, for example, the widening of the Suez Canal and growth of e-commerce);
- limited control of channels to employment by nationally aligned international crewing agencies; and

- net-negative carbon taxes and levies e.g. EU's Emission Trading System (ETS) Levies, Carbon Border Adjustment Mechanism (CBAM); (South-to-North transfers, without credit for decarbonisation projects in the local value chain).

6.5 Opportunities

Government has identified the following opportunities to promote the growth of the marine transport industry:

- South Africa's geographic position straddling a strategic sea route should seek to grow its ability to handle larger trade volumes and tonnage;
- Potential for transformation of intra-continental trade across Africa following the launch of the African Continental Free Trade Area (AfCFTA) in 2020;
- Declining commercial case for flags of convenience and rise of national flags;
- Attractiveness of a registry espousing ethical maritime values, particularly for carriers and value chain participants that share these values and/or subscribe to environmental company reporting;
- Growing shortage of suitable seafarers for international shipping, creating an opportunity for South African seafarers;
- Global re-fleeting to satisfy decarbonisation targets, requiring shipping companies to deploy energy efficiency measures to support decarbonisation programmes;
- Import substitution, including scope for local manufactures of MARPOL-compliant marine fuels (LNG, ammonia, hydrogen) for local demand and passing traffic;
- Industry to look for ways from the country to benefit from the opportunities in the global sector;
- Encourage partnership between foreign shipping companies and local companies in order to increase meaningful participation of local companies throughout the value chain of the marine transport sub-sector;
- Address misalignment in policy interventions and legislation through (i) regular round table discussions between Government and industry, (ii) establishing an inter-departmental maritime industry development forum within Government (as anticipated in the CMTP17), and (iii) secure agreement between Government and industry on common targets in terms of ship registration and seafarer employment creation; and
- Carefully consider the impact of trade facilitation in the recently enacted Border Management Authority Act.

Regarding the opportunities above, a few notable points are that in 2024, the Port of Durban handled the first shipment under AfCFTA. Instability in terms of geopolitics, as recently witnessed in the Middle East, requires South Africa to be efficient and to create adequate capacity to take opportunities of route diversion by shipping lines. The first LNG Terminal Operator is a partnership between VOPAK and Transnet Pipelines appointed in the Port of Richards Bay in 2024. This is a green field project expected to create direct new job opportunities during and post construction, as well as provision of cleaner energy.

6.6 Skills and transformation

As outlined in recent policy documents, South Africa's marine transport sector has the potential to become a major industry that can contribute towards job creation and increased trade. Both these goals will require competent people both in shipping at sea and in the associated enterprises and industries ashore.¹⁴¹ To date, there has been insufficient exploration and innovation in developing and implementing strategies to meet the needs of local enterprises linked to shipping. This sentiment was previously expressed in the DoT's Maritime Transport and Services Sub-Sector Broad-Based Black Economic Empowerment Charter, published in 2009, which noted the concerns of local maritime institutions "with marine and maritime education, training and resources".¹⁴² This means that Government and industry need to urgently embark on a programme of technical, specialised, business and entrepreneurial skills development to accelerate meaningful transformation.

With regard to individual skills development, the demand and supply of skills in the marine transport sector is broadly considered in terms of three occupational categories, namely:

- Seafarers, technically skilled occupations (artisans, engineers and technicians);
- Management and technical professionals; and
- Occupations within the operational support services (including stevedoring, forwarding and clearing, port operations, ship brokerage and chartering, and ship chandelling).

In line with the CMTP17, which calls for industry to prioritise investing in strategic skills, as well as the findings of the 2024 study on skills audit and need analysis for the Marine Transport Sector undertaken by the South African International Maritime Institute (SAIMI). The supply of skills may be adequate in numbers, but there is an apparent disconnect between the type of skills being produced and those

¹⁴¹ DoT, 2017. *Comprehensive Maritime Transport Policy (CMTP) for South Africa*.

¹⁴² DoT, 2009. *Integrated and Sub-Sector B-BBEE Charters of Transport*, Department of Transport (DoT), Pretoria, 25 August 2009.

required by the oceans economy sector. “Critical skills are those that are regarded as vital to improving economic growth, necessary for certain projects and work, and required to enhance the high-level skills pool in the economy”. The skills that were identified as constraining marine transportation include: Engineering Manager, Engineers (industrial, civil, mechanical, chemical, etc.), Information Managers, Data Scientists, Geographic Information System (GIS) specialists, etc.¹⁴³

The shortage of critical skills and experience deficit is a hindrance to effective education and employability in the industry, particularly amongst young South Africans. In this regard, the 2024 SAIMI report is intended to dovetail into a national maritime skills development strategy and implementation plan, as tasked by the Department of Higher Education and Training (DHET),¹⁴⁴ and in cooperation with the DFFE Oceans Economy Working Groups.

Skills development within the broader maritime sector is coordinated by SAIMI with the South African Maritime Safety Authority (SAMSA) playing a key role in the certification and accreditation of seafarers. The sector is spread across 14 different Sector Education and Training Authorities (SETAs), with the Transport Education and Training Authority (TETA) being the central SETA through providing support for a large part of the maritime sub-sectors.

SAMSA is also involved in providing training for prospective mariners and other related occupations of marine transport. Other specialised training and education is also supplied through various universities and academic institutions, technical vocational education and training (TVET) colleges, and private providers spread across the country.

One important challenge involving these different training providers is that they offer different learning approaches for developing South African seafarers. As such, there is a potential gap between training outcomes, on one hand, and the standards and criteria prescribed by the international shipping market, on the other. This gap needs to be closed if South Africa is serious about improving the employability of seafarers, domestically and abroad.

6.7 Research, development and technology

In 2020, the Council for Scientific and Industrial Research (CSIR) was commissioned by the departments of Higher Education and Training (DHET) and Science and Innovation (DSI), as well as the South African

¹⁴³ SAIMI, 2024 report. *Skills audit and need analysis with Implementation Plan for the Marine Transport Sector, in South Africa*.

¹⁴⁴ SAIMI, 2019. *Strategic Plan 2019 – 2023*, The South African International Marine Institute (SAIMI).

International Maritime Institute (SAIMI) and the South African Maritime Safety Authority (SAMSA) to develop the Research, Innovation and Knowledge Management Road Map for the South African Maritime Sector, formulated as a roadmap for research, innovation and technology development to support the Operation Phakisa-Oceans Economy programme and the broader oceans economy. SAIMI has also conducted various research and skills audits. It has further collaborated with the Nelson Mandela University (NMU), University of Cape Town (UCT) and Cape Peninsula University of Technology (CPUT) to establish the Maritime Robotics Centre at NMU to provide new knowledge, expertise and support in the areas of robotics, artificial intelligence, modelling, and underwater systems and oceanography. Additional research studies conducted by these academic institutions include those on long wave and wind studies to find more effective ways to predict storm surges (as well as improve the stability of vessels during storm surges), container design and the development of green energy technologies.¹⁴⁵ The latter research is viewed as particularly important, as marine transport is facing growing pressure to cut its carbon and environmental footprint by, for instance, using alternative fuels and adopting new technology and ship designs – including testing automated crewless vessels with environmentally sustainable designs.¹⁴⁶

In terms of international law, South Africa is required to monitor ships passing within 1,000 nautical miles of its coastline. The current e-navigation system – which digitally integrates the presentation, exchange and analysis of maritime information on board ships and ashore – provides an effective way for South African ports to track and monitor vessels at sea. The e-navigation will eventually evolve into the National Oceans and Coastal Information Management System (OCIMS) for South Africa, a satellite-based, global vessel traffic management and monitoring system, initiated originally under Operation Phakisa-Oceans Economy, which is now the norm in the global shipping industry. OCIMS has already contributed positively to, amongst others, compliance and enforcement interventions. A key milestone of the project was reached in January 2022, when three (3) micro-satellites made by CPUT, collectively known as MDASat-1, were launched into space to facilitate South Africa in monitoring its EEZ using automatic identification system (AIS) data, thereby achieving greater ocean sovereignty – a central focus of Phakisa since 2014. Until now, South Africa has depended on third-party foreign AIS data providers.

With regards to port operations, the TNPA has replaced manual port processes with an integrated, web-based port management system benchmarked against Malaysian and Singaporean ports, which are

¹⁴⁵ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹⁴⁶ UNCTAD, 2021. *Review of Maritime Transport 2021*.

among the world's most efficient, namely the Integrated Port Management System (IPMS). South Africa is in the process to ratify the Facilitation of International Maritime Traffic (FAL) Convention, which maps a way for the development of the Maritime Single Window (MSW) which came into force in 2024 to simplify vessels arrival, stay and departures in a seamless way across multi-agencies of Government. The IPMS has some features of the MSW, and enhancements are required to ensure compliance with IMO standards. This includes mobile X-ray customs cargo inspection scanners, which can differentiate between 40 types of materials. The Port of Ngqura in particular has been refitted with advanced systems that are able to accommodate the latest generation of container ships, including an automated gate system with pre-booking or pre-advice functionality, as well as a port planning centre with a three-dimensional view of the terminal for real-time performance monitoring and security surveillance.¹⁴⁷

6.8 Environmental sustainability

Ships are responsible for an estimated 2.7% of total man-made emissions and pollution from oil spills, offshore refuelling (bunkering) and the disposal of waste and effluent at sea. There are several international treaties covering the prevention of pollution by vessels, key among these the International Convention for the Prevention of Pollution from Ships (MARPOL). Recent amendments to MARPOL have made energy efficiency standards mandatory, making it the first international climate change treaty to be formally adopted since the Kyoto Protocol in 1997, and the first globally binding instrument introducing energy efficiency regulations for any international industry sector.¹⁴⁸

Despite South Africa's recent commitment to reach net zero emissions by 2050 and decarbonising its transport sector (both on land and sea),¹⁴⁹ vessels carrying heavy fuels with a sulphur content exceeding the current international limit of 0.5% are permitted to enter South African waters – provided they are installed with exhaust gas cleaning systems (EGSCs), commonly referred to as 'scrubbers'. This limit was made compulsory in January 2020 following an amendment to MARPOL Annex VI, which specifically deals with the sulphur content of marine fuel oils (the previous content amount was 3.5%). Although scrubbers have been regarded as an appropriate means to meet the cap on emissions of sulphur oxides, care needs to be taken that South African national interests and environmental priorities are observed in terms of discharges from vessels operating in South African waters and ports. In addition, in the NPA 25/26 tariff application to the Ports Regulator of South Africa, the Authority's request for a 10% reduction

¹⁴⁷ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹⁴⁸ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹⁴⁹ See, for example: Department of Transport, 2018. *Green Transport Strategy for South Africa: (2018-2050)*.

on port dues in liquid bulk tankers in possession of a Green Award Certification was supported by the Regulator.

As a party to the IMO, South Africa needs to commit by its regulations and therefore cannot avoid the increasing international demand for zero-carbon shipping fuels and components to meet decarbonisation targets. The domestication of MARPOL Annex VI into existing or new legislation (Marine Pollution Amendment Act No. 36 of 2024 was signed by the President in January 2025) to enable the country to enforce the new regulations. South Africa implements and enforces the IMO global fuel sulphur cap of 0.50% through the Marine Pollution (Prevention of Pollution from Ships) Act, 1986 and associated MARPOL Annex VI requirements administered by SAMSA. Compliance is monitored through Port State Control inspections, verification of bunker fuel documentation, fuel sampling, and inspection of ship air pollution prevention certification.

Recognising the dangers caused by pollution in their facilities, a common African Green Ports Initiative was launched in December 2020 by several African countries, spearheaded by the Port Management Association of Eastern and Southern Africa (PMAESA), which comprises 20 ports on the continent. To achieve 'green port' status, ports must invest in their marine environment in cooperation with surrounding communities. Currently, the TNPA port of Ngqura in Gqeberha is the only port with green status in South Africa and maintains this status through a number of measures that it promotes sustainable development, including biodiversity conservation programmes.¹⁵⁰

South African waters, along with its ports and harbours, are highly exposed to oil spills and bunkering pollution from offshore refuelling. In 2018, the DoT established the Interim Incident Management Organisation (IMOrg) to formulate a standardised national approach to managing oil spills in South African waters. This enables South Africa to maintain a national system for preparedness and response to major marine pollution incidents and allows stakeholders to assess the country's level of preparedness and response. The organisation comprises representatives from the South African Maritime Safety Authority (SAMSA), the National Disaster Management Centre, Provincial Disaster Management Agencies and Departments, Petroleum South Africa (PetroSA), the Petroleum Agency of South Africa (PASA), the departments of Forestry, Fisheries and the Environment (DFFE) and Mineral Resources and

¹⁵⁰ Marleny Arnoldi, 2019. 'Port of Ngqura maintains only "green port" status in South Africa', *Engineering News*, 26 March 2019.

Energy (DMRE), Southern African Foundation for the Conservation of Coastal Birds (SANCCOB), and other industries in the oil response supply value chain.

6.9 Policy considerations

The White Paper on National Transport Policy of 1996 laid the foundation for an integrated and systematic way of developing all modes of transport, including marine transport in South Africa. It also paved the way for the adoption by Government of several significant pieces of policies and legislation in marine transport, namely the South African Maritime Safety Authority Act 5 of 1998, the National Commercial Ports Policy of 2002 and the National Ports Act 12 of 2005. These pieces of legislation formed the foundational basis for establishing the South African Maritime Safety Authority (SAMSA) in 1998, which is the custodian and steward of all maritime policy in South Africa, and the Ports Regulator in 2005.

As discussed above, South Africa's potential to become a major regional maritime nation is limited by the size of its merchant fleet. Enabling legislation therefore came into effect in 2014 in the form of the Taxation Laws Amendment Act 31 of 2013, and thereafter the introduction of section 12Q of the Income Tax (as subsequently amended), which introduced a package of tax incentives designed to attract vessels to the South African ship's register. Although tax reforms and tariff incentives have been widely welcomed by industry stakeholders, additional incentives are required to accelerate the growth of the domestic ship ownership market.¹⁵¹

In order to increase the significance of South Africa's trade performance and global competitiveness, coupled with the advent of the National Development Plan (NDP) in 2011, which identified transport as a critical driver of socio-economic growth and job creation, the Department of Transport (DoT) approved the Comprehensive Maritime Transport Policy (CMTP17) for South Africa in 2017. The development of the CMTP17 is in part an elaboration of the 1996 White Paper on National Transport Policy, by a myriad of supportive programmes, policies and regulations governing marine transport practices and activities in South Africa, and also by Revised African Maritime Transport Charter of the African Union (AU), adopted by Government in October 2009.¹⁵²

¹⁵¹ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

¹⁵² See: African Union, 2010. *Revised African Union Maritime Charter*, adopted by the 15th Ordinary Session of the Assembly, Kampala (Uganda), 26 July 2010. The document was first adopted at the 2nd African Union Conference of Ministers Responsible for Maritime Transport, under the theme "Creation of a safe, secure and clean maritime transport industry," held in Durban, Republic of South Africa from 15 to 16 October 2009.

Broadly speaking, the CMTP17 is all-inclusive policy which aims to guide the governance, regulation, international competitiveness, and development of South Africa's ocean economy, and in particular marine transportation. It seeks to create an enabling policy environment that unlocks the full potential of the marine transport industry, with a view to grow the registry, create jobs, stimulate trade, and support South Africa's broader economic objectives. Critically, the CMTP17 saw the establishment of the Maritime Transport Sector Development Council (MTSDC) and a Maritime Broad Based Black Economic Empowerment Charter Council (MBBEECC) in June 2019, which are both intended to promote the development and transformation of the sub-sector.

Although the intentions and objectives of the CMTP17 are agreed between industry and Government, particularly in terms of fleet growth, global competitiveness and job creation, there has been an apparent lack of consensus about the implementation path that offers the most credible and achievable way to realise those objectives. This has translated into some policy uncertainty about Government's ambitions to participate in the value chain and related legislative priorities.¹⁵³

The tabling by DoT in March 2020 of the Merchant Shipping Draft Bill of 2020, which will repeal the ageing Merchant Shipping Act 57 of 1951 and several other related marine laws, is expected to remove some policy uncertainty. The draft Bill aims to create a new regime to South Africa's shipping industry by addressing key issues facing the industry and enhancing its contribution to the growth and transformation of the South African economy. This includes aligning South Africa's shipping legislation with the rest of the maritime world – particularly the country's major trading partners. This is especially the case with coastal traffic regulations, ports and logistics, seafarer employment and safety, new technology for shipping lines, and environmental or 'green' legislation, including the transition to low sulphur fuels.

6.10 Targets and interventions through to 2035

While South Africa is ideally positioned to serve East-West cargo container traffic, the global market for shipping freight and cargo is dominated by a limited number of established players, making it difficult to get breakthrough growth in this sub-sector. Cargo growth is projected to continue to drive economic growth in South Africa,¹⁵⁴ but the potential to become a major maritime player is limited by the size of its

¹⁵³ In this regard, international precedents and several academic studies offer valuable insight into historical successes and failures of efforts by developing nations to grow their maritime economies, as well as inter alia related costs and operational inefficiencies can impact the entire export value chain. See, for example: Okechukwu C. Iheduru, 1996. *The Political Economy of International Shipping in Developing Countries* (Associate University Press, London)

¹⁵⁴ DFFE, 2020. *Towards a South African Oceans Economy Master Plan*.

merchant fleet, which in turn obstructs its potential to support seaborne jobs. In this regard, through globally competitive tax regime and other incentives,¹⁵⁵ Government aims to attract more cargo-carrying ships to the national ship registry, as a catalyst for job creation, enterprise development and global maritime influence. Economic forecasts estimate that cargo handling could contribute between ZAR16 – ZAR19 billion to GDP and create 14 000 direct jobs by 2033, whilst sea and coastal water transport could contribute around ZAR2 billion to GDP and create 3 000 direct jobs, with supporting transport activities contributing between ZAR2 and ZAR4 billion and creating 1 000 direct jobs.¹⁵⁶ A review of the successful Philippines seafarer employment model reveals that over time, each seafarer job can result in 0.8 to 1.0 jobs created onshore, while hospitality jobs in the cruise industry can match or exceed jobs created in the merchant marine. Also, seafarers should be trained to global standards to ensure employability on foreign owned and non-SA flagged vessels (to avoid a situation where jobs growth is limited to the rate of fleet growth). Government has suggested that South Africa’s international trade volumes and seafarer population could offer significant support for the country’s maritime aspirations, for instance if up to 40% of trade volumes could be transported by South African-flagged ships by 2030.¹⁵⁷

The tabled below is the sub-sector plan relating to the Marine transport sub-sector of South Africa’s Oceans Economy. The table outlines various high-level interventions which aim to stabilise, revitalise and grow this specific sub-sector through to 2035. Building on Operation Phakisa initiatives, the plan aims focus on building new port facilities and upgrading existing ones, in conjunction with a concerted effort to increase the number of South African flagged vessels. The combination of these two interventions is expected to increase market growth and drive port and cargo handling efficiency, which, in turn, will be supported by longer-term interventions (5+ years), which will aim to mitigate the possible risk of staff shortages and supply chain disruptions.

The interventions to stabilise, revive and grow the sub-sector to 2035 are detailed below.

¹⁵⁵ Enabling legislation came into effect in 2014 in the form of the Taxation Laws Amendment Act, 2013, which introduced a package of tax incentives designed to attract vessels to the South African ship’s register.

¹⁵⁶ DFFE 2020. *Towards a South African Oceans Economy Master Plan*.

¹⁵⁷ Veitch, 2021. *Maritime Transport and Marine Manufacturing in South Africa*.

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
Infrastructure and Equipment	Develop Green Hydrogen Export Corridor in the Port of Saldanha	X			RFI completed	Lead TNPA Support DOT
		X			Pre-feasibility scope for port of Saldanha completed	
	Develop infrastructure to provide alternative fuel use	X			Pre-feasibility study undertaken	
			X		Feasibility studies completed	
				X	Phase 1 Port Development	
		X			RFI for use of alternative fuel for maritime fleet completed	
		X			Pre-feasibility study undertaken	
	Renewable Energy Program			X	Pre-feasibility study completed	Lead TNPA Support
		X			RFI completed	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
		X			Business case completed	DOT
				X	Implementation underway through EPC	
	Onshore power	X			Pre-feasibility study planned	Lead TNPA
			X		Feasibility study and pilot planned	Support DOT
	Develop Port of Boege Baai as Green Hydrogen (GH2) hub for South Africa	X			Market research studies conducted to evaluate potential demand.	Lead TNPA Support DOT
			X		Next phase pre-feasibility study	Lead

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
Technology	Develop an integrated system architecture that integrates rail, ports, and other port users to ensure adequate planning to optimise efficiencies and turnaround times: Implement Maritime Single Window (FAL Convention)		X		Enhanced and integrated information system with interface between Transnet and port users across trade value chain	Lead DOT Support: Transnet, Industry DPWI (SEZs including RBIDZ, SBIDZ, Coega IDZ, ELIDZ, Dube Trade Port, OR Tambo SEZ), Industry
Market growth	Unlock access to unutilised land within the small harbours by: Promoting access for boat launching and commissioning purposes in small harbours;	X			Increased number of under-utilised harbour facilities made available to the small boat-building sector.	Lead DFFE/DPWI Support DPWI, SALGA, DALRRD

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
	Small harbours authorities availing under-utilised facilities available for small boat building industry on a long-term basis.		X		Long-term access or lease agreements concluded between authorities and small boat-building enterprises.	
	Promote establishment of local carriers that engage in international shipping with South African flagged ships by:			X	Increased number of local carriers	Lead DOT (SAMSA)
	Promoting the creation of shipping enterprises through enhanced access to capital, skills and partnerships.		X		Increased enterprise development in the value chain	Support DBSA
			X		Increased number of SA seafarers	
	Government support of South African Merchant flagged ships		X		Increased number of SA flagged ships	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
	Establishing incubation programmes to provide for non-financial support and inject financial support for SMME players to enable these to offer credible services to the marine sector	X			Increase employment of local workers/seafarers	
	Investigate the potential for Coastwise Shipping rules to help expand the SA ship register and number of jobs to increase competitiveness of local players to provide service (including understanding the impact on trans-shipment, particularly containers)		X		Coherent legislative provisions on coastal shipping developed and applied	Lead SAMSA Support DOT
Enhance Skills Development and capacity building	Accelerate skills and capacity building by: Growth of SA-flagged fleet that can offer training berths.	X	X		Suite of curricula and programmes for jobs required for ships (officers, cadets, ratings)	Lead DHET (SAIMI) Support DBE, Tertiary institutions, DOT (SAMSA, TNPA),

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
	- Develop marine transport curricula that is in line with demand side employability criteria. - Maintain compliance with globally accepted standard curriculum for seafarers including maritime digital technologies - Implement maritime awareness programmes including industry masterclasses to promote seafaring and other marine transport related careers growth of maritime culture amongst the South African youth. - Partnering with rural communities to attract trainees from previously disadvantaged communities. - Facilitate train the trainer programmes for seafaring and other related marine transport qualifications in line with international standards. - Strengthening partnerships with international and local crewing agencies to facilitate access to work		X		and other employers within the marine transport sector (onshore)	Marine Industry Association, SAMPA), Organized Labour, DWYPD (including NYDA), DHA, DEL, MerSETA
				X	- Increased funding for the National Seafarer Development Programme (NSDP) - Increased number of training facilities that have equipment and infrastructure for marine transport	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
	placement and employment opportunities for seafarers. - Facilitate the increased participation by women in seafaring careers. - Promoting maritime studies at basic education level, targeting STEM schools, providing bursaries and other support mechanisms. - Developing foreign partnerships to promote local seafarer development programmes and curricula, to underpin employment and work placement opportunities. - Expanding capacity of local training facilities.				related training (e.g. mock-ups, simulators) - Increased number and integration of maritime awareness programmes to promote maritime careers and culture amongst the youth - Increased funding for bursaries for marine transport qualifications	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
Environmental Sustainability	Climate Change Mitigation Interventions through:		X		IMO global fuel sulphur cap of 0.50% is maintained	Lead DFFE / DOT Support: the dtic, TNPA, DMPR, DEE, Industry, Research Institutions, ICS, IMO, Universities, DIRCO, DHET (SAIMI)
	Ensuring industry compliance with IMO low sulphur emission requirements					
	Development of alternative fuels: green energy, green hydrogen and derivatives, LNG, and biogas products		X		IMO Net-Zero Framework implemented	
	Engagement with International Maritime Organisation (IMO) and International Chamber of Shipping (ICS) to get carbon levies reinvested into 'global south' decarbonisation efforts, including South Africa securing IMO and ICS recognition for decarbonisation investment and given credits across the supply chain from mine to market.		X		Decarbonisation efforts appreciated and carbon levies reinvested into the "Global South"	
	Monitoring of emission in Maritime within the port boundary	X			Develop a framework for current emission monitoring and reporting	Lead TNPA Support DOT

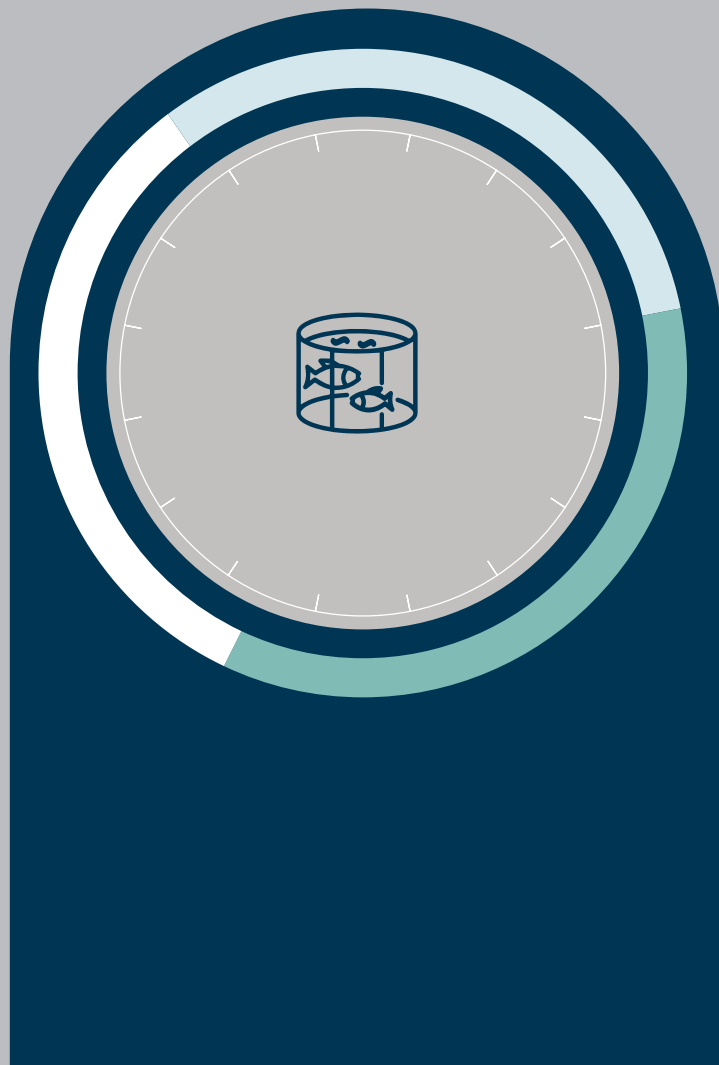
Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
Enhance Communication and Coordination	Improve Consistent and regular communication between government and industry by: Conducting regular round table discussions between Government and industry, focused on policy objectives and interventions required to achieve industry growth rates	X			Inter-departmental maritime industry development forum established	Lead DOT (SAMSA) Support DMRE, the dtic, DFFE, DOT (Transnet, TNPA), DIRCO, DEL, DHET (SAIMI), Marine Industry, GCIS, DSBD
	Creating an inter-departmental maritime industry development forum within Government, with an independent chair (acceptable to all parties) that is appointed by the Executive Authority	X			Formal Inter-departmental maritime industry forum operational and/ functional	
	Creating a national international shipping industry representative body, comprised of key representative of the maritime value chain by industry and invite representation with combination of industry knowledge and South African entities that have an interest in and / or are invested in the		X		Formally established industry structure	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
	South African ocean shipping value chain including ship owners, to represent the interests of the industry with a clear constitution, as well as secure affiliation of the industry body with appropriate international ocean shipping representative organisations including the ICS;					
	Co-creating a Government and industry defined national interest for international shipping, and advancing these interests in international organisations, including the IMO and ICS	X			Targeted national interest for the international shipping sector defined and advanced by government (IMO) in collaboration with industry (ICS)	

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	2-5	5+		
Improve Maritime Safety	Improve maritime security monitoring and enforcement by: Continuing to monitor and convey South Africa's position on addressing piracy, crew hijacking and other maritime security risks through relevant international security fora such as United Nations Security Council (UNSC) and African Union Peace and Security Council (AUPSC);	X			Improved monitoring of maritime security risk	Lead SAMSA Support DOT, International Cooperation, Trade and Security (ICTS) cluster, NATJOINTS, Marine Industry
	Ensuring adequate national capability with sufficient resources including enforcement fleet, salvage fleet and search and rescue fleet to undertake maritime surveillance, anti-pollution, anti-crime as well as search and rescue functions, possibly through public private partnerships; and;	X			Reinforced national capacity on maritime surveillance, safety and security; and sufficient resources acquired	
	Integrating and coordinating safety and security in ports.	X			Improved safety and security coordination in ports	

SUB-SECTOR PLAN

AQUACULTURE



7. Aquaculture Sub-Sector Plan

Aquaculture is defined as the farming of aquatic organisms, including crocodiles, in a controlled aquatic environment including marine, brackish or freshwater involving: (a) a degree of human intervention in the rearing process to enhance production which include propagation, breeding, regular stocking, feeding, protection from predators and harvesting of cultured aquatic organisms; and (b) individual or corporate ownership of the stock being farmed, and includes ranching and stock enhancement.¹

This section of South Africa's Oceans Economy Master Plan presents a sub-sector plan for the aquaculture industry. The plan covers the following areas:

- A review of the global industry;
- A review of the national industry;
- Current interventions;
- Challenges;
- Opportunities;
- Skills and transformation;
- Research, development and technology;
- Environmental sustainability;
- Policy considerations;
- Targets and interventions through to 2035.

7.1 Global sub-sector review

Globally, aquaculture is an important source of food security and is the fastest-growing food production sector. In recent years, the production of aquaculture products has overtaken the level of production in the wild capture fishing sector. A report by the Food and Agriculture Organisation (FAO), entitled *The State of World Fisheries and Aquaculture 2026* (SOFIA), states that the contribution of world aquaculture to world fish production has constantly increased, reaching 53% in 2024 (up from 13.4% in 1990).² One of the reasons cited for aquaculture's growing contribution to total fishery production is a shift in focus by countries toward sustainable fish farming in an attempt to mitigate the environmental risks associated

¹ Department of Forestry, Fisheries, and the Environment (DFFE), 2023. Aquaculture Development Bill, published in Government Gazette No. 49736 of 17 November 2023.

² FAO, 2026. *The State of World Fisheries and Aquaculture 2026*.

with large-scale fishing and the increased demand for protein products across the globe.³ SOFIA anticipates that global aquaculture will continue to drive the growth in global fish production, with production levels expected to reach ZAR119 million by 2032. Critically, the biggest regional expansion, up to 18%, is expected in Africa.⁴ This suggests that aquaculture growth has the potential to meet the growing need for aquatic foods and to contribute to food security, poverty reduction and, more broadly, to achieving sustainable development and the Millennium Development Goals (MDGs).

In terms of global volume, marine and coastal aquaculture reached 77 million tons in 2024, including 38 million tons of aquatic animals and 39 million tons of algae. Aquaculture production of aquatic animals was dominated by freshwater systems, which produced 64 million tons (63% of global aquaculture aquatic animal production), while marine and coastal systems produced 38 million tons (37%). Freshwater aquaculture production was dominated by finfish (89%), whereas marine and coastal aquaculture production was dominated by molluscs (53%), followed by finfish (24%), crustaceans (22%) and other marine invertebrates (1%).⁴

Aquaculture fish farming is dominated by Asia, which accounted for approximately 89% of the global total in volume terms in 2024. Over the same period, the shares of Africa and the Americas have steadily increased, while those of Europe and Oceania have decreased slightly. China is the largest national producer of world aquaculture products, accounting for around 56% of total world volume, followed by India (12%), Indonesia (6%), and Vietnam (5%).⁴ Regionally, the top aquaculture producers in Africa are Egypt, Nigeria, Uganda, Ghana, and Zambia. In 2024, Africa's aquaculture production exceeded 2.4 million tons, with Egypt accounting for over 66% of the continent's total production. While production in sub-Saharan Africa has shown consistent growth, the region remains underrepresented in global aquaculture, contributing less than 2 percent of the global total. South Africa is among the top ten producers in the region but accounts for a small fraction of the continent's overall production.⁵

In 2024, the primary fisheries and aquaculture sector employed approximately 65.3 million people globally, an increase from 61.8 million in 2022. Women accounted for 27% of the total workforce. Among

³ Department of Forestry, Fisheries, and the Environment (DFFE), 2020. *Towards a South African Oceans Economy Master Plan*.

⁴ FAO, 2026. *The State of World Fisheries and Aquaculture 2026*.

⁵ FAO, *Africa's Growing Demand for Aquatic Foods Creates a Supply Gap that Sustainable Aquaculture Expansion Could Help Close* (2026).

workers for whom working-time information was available, 51% were employed full-time, 29% part-time and 20% occasionally. Most employment was concentrated in Asia, which hosted 85% of the workforce, followed by Africa (9%), Latin America and the Caribbean (5%), and Europe, Oceania, and North America, which together accounted for 1%. Small-scale fisheries and aquaculture continue to provide vital employment, livelihoods and food security, particularly in developing regions.⁶

7.2 South African sub-sector review

There is huge potential for the aquaculture industry in South Africa. Government has identified aquaculture as a sub-sector in South Africa's broader oceans economy that presents a good opportunity to diversify fish production to:

- Satisfy local demand;
- Future export potential;
- Contribute to food and nutritional security;
- Create sustainable job opportunities;
- Foster economic development;
- Capitalise on export opportunities;
- Stimulate rural development and livelihoods;
- Attract foreign direct investment;
- Safeguard sustainable environmental integrity; and
- Create Micro, Small, and Medium Enterprises (MSMEs) and wealth-generating opportunities through aquaculture ⁶.

South Africa has a well-established aquaculture industry. It is diverse in both the farming methods used and species farmed, and can be divided into two broad categories:

- Freshwater aquaculture, which consists mainly of freshwater species such as Rainbow trout (*Onchorynchus mykiss*), Brown trout (*Salmo trutta*), Common carp (*Cyprinus carpio*), African catfish (*Clarias gariepinus*), Mozambique tilapia (*Oreochromis mossambicus*), Nile tilapia (*Oreochromis niloticus*), Marron crayfish (*Cherax tenuimanus*), Nile crocodile (*Crocodylus niloticus*) and several ornamental species (e.g. Koi carp); and
- Marine aquaculture, which consists of Abalone (*Haliotis midae*), Pacific oysters (*Crassostrea gigas*), seaweeds (*Ulva spp* and *Gracilaria spp*), Mussels (*Mytilus galloprovincialis* and

⁶ FAO, 2026. *The State of World Fisheries and Aquaculture 2026*.

Choromytilus meridionalis), Dusky Kob (*Argyrosomus japonicus*), Yellow Tail (*Seriola lalandi*), Rainbow trout (sea run *Onchorynchus mykiss*), Atlantic salmon (*Salmo salar*) and several ornamental species.

Although South Africa is a small player in the global and regional market for aquaculture products, the industry has expanded substantially in recent years, with production levels increasing from 4,777 tons in 2013 to just under 8,668.66 tons (including seaweed) in 2023 (81.5% increase).⁷ Production growth was largely driven by the marine aquaculture sector, which remained the dominant contributor throughout the years. Following steady expansion between 2018 and 2022, with aquaculture production peaking at 9,835 tons in 2022 before declining to 8,668.66 tons in 2023. Despite this decline, production levels in 2023 remained significantly higher than those recorded at the beginning of the decade, reflecting the sector's overall growth trajectory and continued contribution to South Africa's oceans economy. Figure 7 illustrates the production trends of both the marine and freshwater aquaculture sectors between 2013 and 2023.⁷

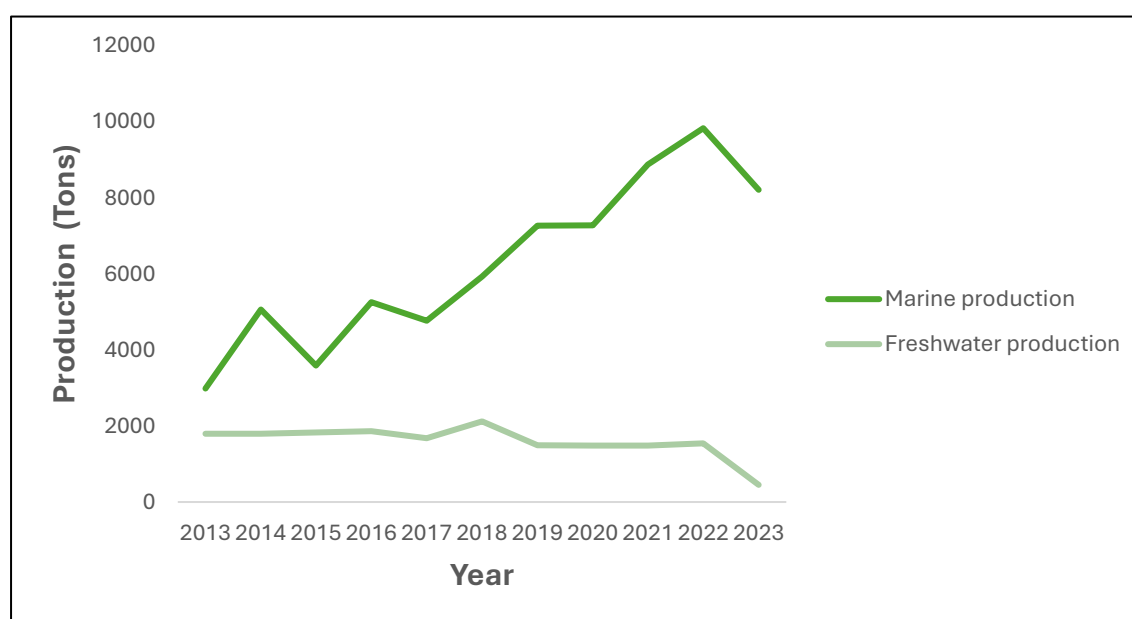


Figure 7: South Africa's aquaculture production growth over a 10-year period from 2013-2023

(Source: DFFE, Aquaculture Yearbook 2024)

In 2023 the domestic aquaculture sector contributed 8,217.03 (94.79%) to total production of 8,668.66 tons (including freshwater production). As shown in Figure 8 below, in 2023 mussels were the leading commodity with 2,546.92 tons, followed by abalone (2,439.28 tons) and oysters (490.86 tons), with finfish

⁷ DFFE, 2024. *Aquaculture Yearbook 2024*.

contributing the least towards total production (62.91 tons). Freshwater aquaculture on the other hand, contributed 451.62 tons (5,21%) to total production. As seen in Figure 9 trout contributed most of the production with 215.70 tons, followed by tilapia (207.42 tons), catfish (16 tons), marron crayfish (6,00 tons), common carp (5 tons) and lastly ornamentals (1.51 tons).⁷

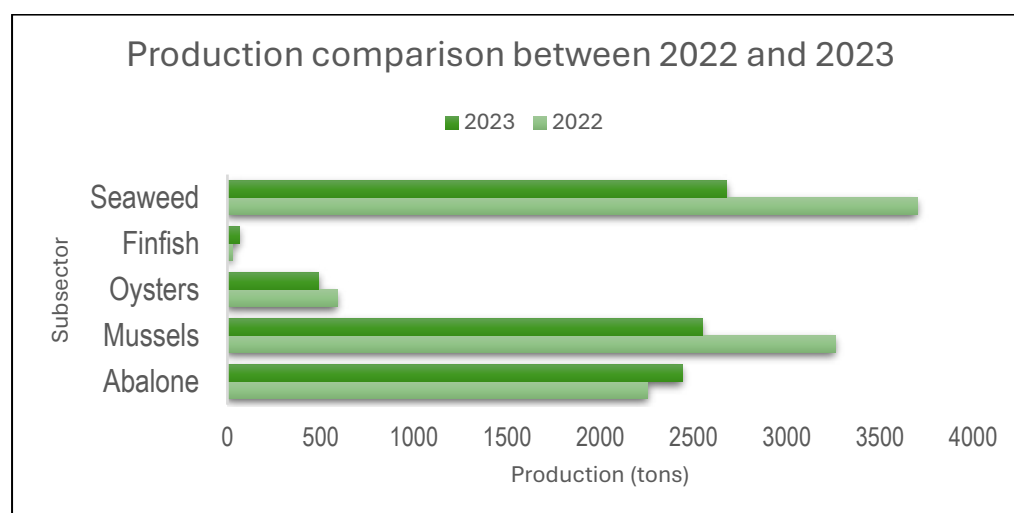


Figure 8: Total production values for marine aquaculture species in 2022 and 2023

(Source: DFFE, Aquaculture Yearbook 2024)

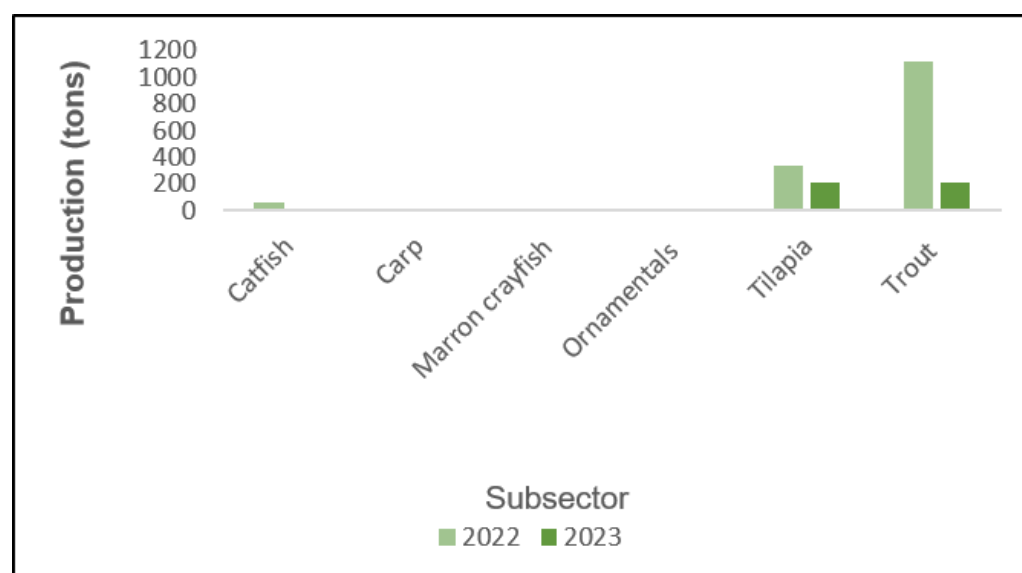


Figure 9: Total Production Values for Freshwater Aquaculture Species in 2022 and 2023

(Source: DFFE, Aquaculture Yearbook 2024)

South Africa's diverse climatic conditions allow for aquaculture production of different species to occur in several regions of the country depending on multiple factors, such as weather conditions, temperatures,

and water quality (see Figure 10 below). The most significant regions for freshwater aquaculture production – other than the coastal provinces such as the Western Cape, Eastern Cape, and KwaZulu-Natal (KZN) – are Mpumalanga and Limpopo. Marine aquaculture, as the term suggests, occurs along South Africa's coastal regions in the Northern Cape, the Western Cape, the Eastern Cape, and in KZN.⁵ Out of the total aquaculture production in 2023 (8,668.66 tons), the Western Cape province was the major contributor with 7,402.78 tons (85.4%) from 41 farms, followed by Eastern Cape with 976,44 tons (11.3%) from 17 farms, the Northern Cape with 84,79 tons (1.0%) from 7 farms, KwaZulu-Natal with 16.54 tons (0.2%) from 11 farms, the Mpumalanga with 44.20 tons (0.5%) from 22 farms, Gauteng with 89,71 tons (1%) from 26 farms, the North West with 32.20 tons (0.4%) from 7 farms, Limpopo with 22 tons (0.3%) from 40 farms, and lastly the Free State contributing 0 tons (0%) from 8 farms.⁸

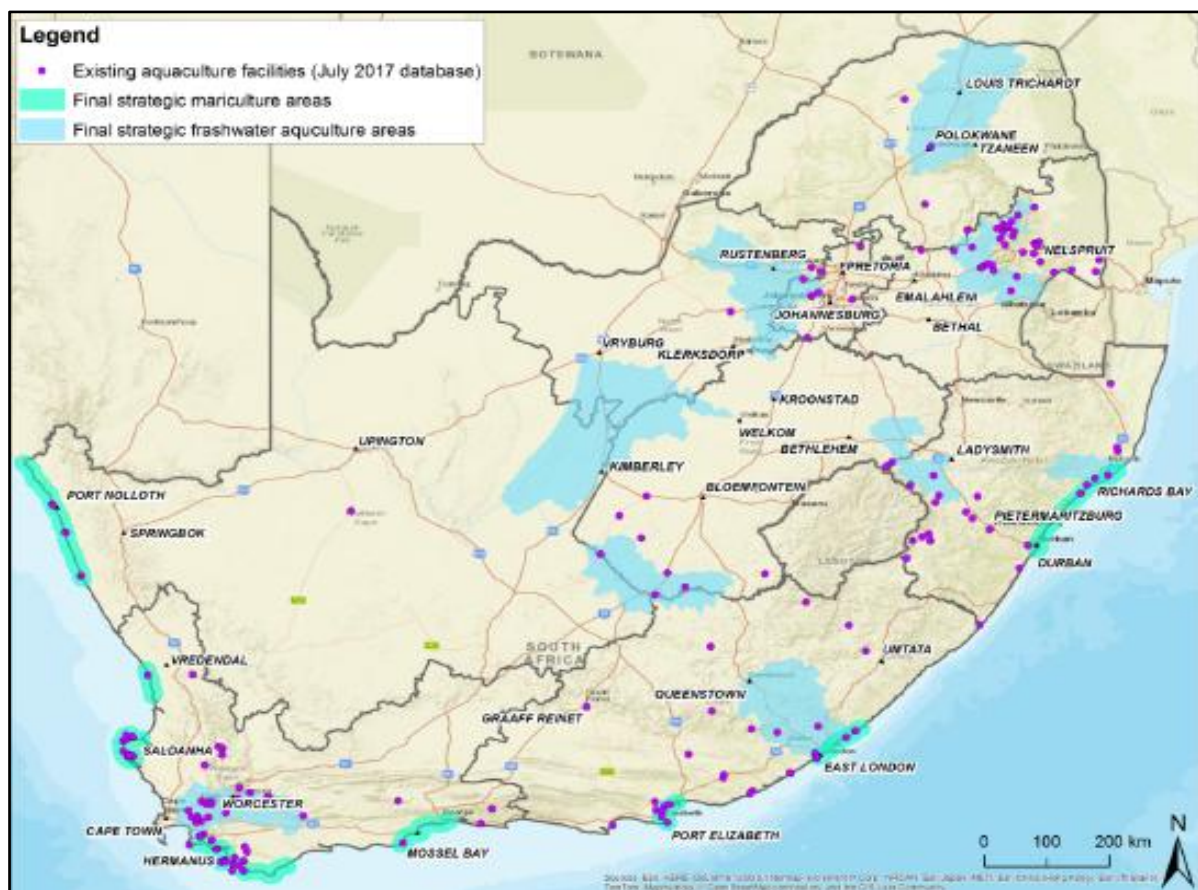


Figure 10: Strategic Environmental Zones for Aquaculture in South Africa

⁸ DFFE, 2024. *Aquaculture Yearbook 2024*.

(Source: DEFF (2019). Strategic Environmental Assessment for Marine and Freshwater Aquaculture Development in South Africa. CSIR Report No. CSIR/IU/021MH/ER/2019/0050/A)

In 2023, the aquaculture industry employed approximately 3,236 people in South Africa, representing a decrease of 1,785 employees (35%) compared to 2022. Of the total workforce, approximately 2,762 (85%) were permanent employees, while 474 (15%) were employed on a temporary or seasonal basis. In addition, it is estimated that a further 100,000 people are employed in industries that supply goods and services to the aquaculture sector. The marine aquaculture sector accounted for the majority of permanent employment, contributing 91% of all permanent jobs in the industry, reflecting its relatively advanced level of commercial development. In contrast, the freshwater aquaculture sector accounted for 58% of seasonal employment. Women represented approximately 33% of the total workforce (1,055 employees), while men accounted for 67% (2,181 employees). Youth (18–35 years) occupied 1,183 jobs, representing 37% of total employment. Critically, most employment opportunities are concentrated in rural and semi-rural areas where alternative economic opportunities are often limited or seasonal.⁹

As Figure 11 below shows, the majority of aquaculture employment in South Africa is concentrated in the Western Cape (79.3%), followed by the Eastern Cape (7%), Gauteng (4.2%), Northern Cape (4.1%), KwaZulu-Natal (2.1%), Mpumalanga (1.1%), Northwest (1.1%) and Limpopo (1%).⁹

⁹ DFFE, 2024. *Aquaculture Yearbook 2024*.

Note: A percentage of the exports reported here (as well as other species) were not farmed locally. Some products were exported from Fish Producing Establishments (FPEs) that imported products, including Pacific salmon, Atlantic salmon, and scallops

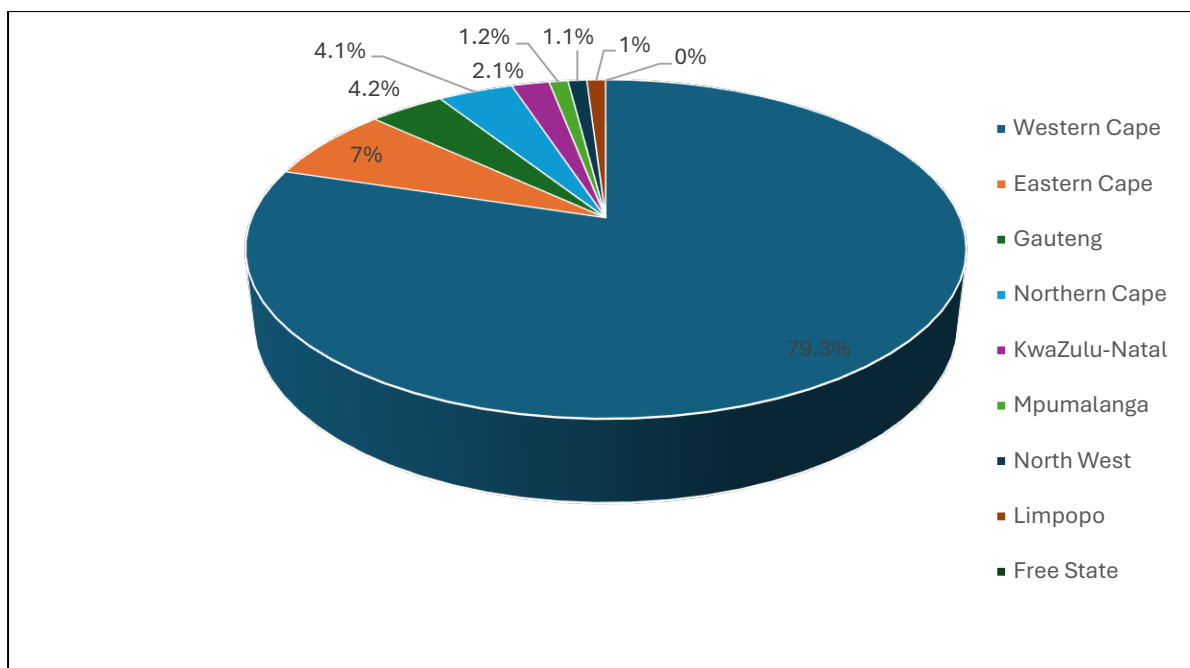


Figure 11: Percentage Employment Contributed By Province In 2023

(Source: DFFE, Aquaculture Yearbook 2024)

South Africa's total aquaculture exports by volume for 2023 were 1,955.70 tons (down from 2,542.71 tons in 2022, representing a 23% decrease). In value terms, aquaculture exports were valued at approximately ZAR580.36 million. The major exported species in 2023 included abalone with 1,118.38 tons, followed by tilapia (215.33 tons), mussels (179.58 tons), catfish (162.14 tons), oysters (136.14 tons), Atlantic salmon (73.80 tons), trout (67.76 tons), Pacific salmon (1.75 tons), carp (0.61 tons) and ornamentals (0.21 tons). In terms of value, Hong Kong remained South Africa's most important export market for aquaculture products in 2023, generating approximately ZAR297.92 million. Taiwan ranked second with exports valued at ZAR196.02 million, followed by China (ZAR17.83 million), Singapore (ZAR6.23 million) and the United Arab Emirates (ZAR4.96 million). The dominance of these markets reflects the significant contribution of high-value abalone exports to South Africa's aquaculture trade, with abalone generating the vast majority of export revenue during 2023 (see Figure 12 below).⁹

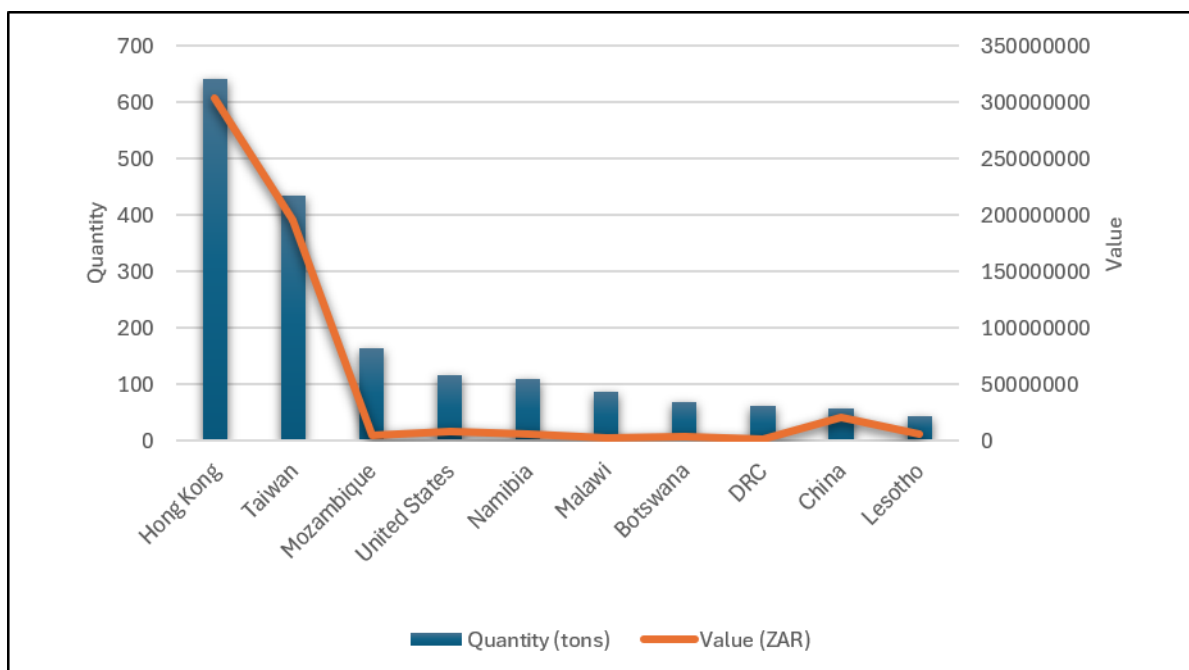


Figure 12: Top Ten Export Markets for South African Fish Products In 2023

(Source: DFFE, Aquaculture Yearbook 2024)

7.3 Current interventions

The DFFE has led the Oceans Economy Aquaculture focus area since the launch of *Operation Phakisa* in 2014. At the time, the Aquaculture Lab under the *Phakisa* initiative concluded that South Africa's aquaculture industry had a high growth potential, due to an increasing demand for fish products to meet increasing global population levels. The Aquaculture Lab comprised stakeholders from industry, government and academia who identified nine (9) key initiatives, as shown in Table 8 below.

Table 8: Aquaculture priority initiatives: Operation Phakisa, 2014

	Initiative	High-level progress
1.	Selection and Implementation of Catalyst Projects	- Set criteria to register projects, detailed planning, and monitoring. - Issue resolution. - Monitor outcomes (jobs, production, investment)
2.	Legislative reform	- Dedicated legislation for aquaculture - Streamlining and strategic planning
3.	<i>Inter-Departmental Authorisations Committee</i>	"One-stop-shop" - Streamlining authorisations

Table 8: Aquaculture priority initiatives: Operation Phakisa, 2014

	Initiative	High-level progress
4.	Globally recognised monitoring and certification system	• Diversify markets. • Ensure competitiveness
5.	<i>Aquaculture Development Fund</i>	• Co-ordinate funding and investment promotions • End to end funding interventions to increase participants
6.	<i>Capacity building and skills development</i>	• Address skills needs of the sector. • Develop local capacity in terms of specialised occupations (aquatic vet)
7.	<i>Coordinated industry-wide marketing efforts.</i>	• Market local and international products (increase local consumption) • Enable third-party certification (auditors)
8.	<i>Government Preferential Procurement</i>	• Promote procurement of locally farmed products by prisons, hospitals, and schools
9.	<i>Aquaculture Development Zone</i>	• Facility access to land and water • Create enabling environment for new entrants/investment

One initiative addresses the selection and implementation of catalyst projects, improving both the number and productivity of the new farms. Three other initiatives relate to the creation of an enabling regulatory environment, while others focus on funding support, increasing the skills pool and awareness, and improving access to markets. Initiative 9, entitled *Develop and Implement Aquaculture Development Zones (ADZ's)*, seeks to promote investment into the industry and create an enabling environment to promote growth and jobs. The Lab's targets over five years (from 2014 to 2019) were to:

- increase revenue of the sub-sector from R670 million to ZAR3 billion;
- increase production by 20,000 tons;
- increase the number of jobs from 2,227 to 15,000; and
- to ensure participation of HDIs to support transformation in the industry.

Since the Lab in 2014, forty-eight (48) projects have been assessed and incorporated as part of Operation Phakisa Oceans Economy and twenty-five (25) projects are producing farmed aquaculture animals. By the end of 2024, total actual investment committed to Operation Phakisa aquaculture projects exceeded ZAR 4.15 billion, of which ZAR 671.5 million was from Government and ZAR 3.48 billion from the private sector. This exceeded the projected additional investment target of ZAR 1.9 billion for 2018/19 by more than 118%. Furthermore, Operation Phakisa projects produced 6,641.77 tons of aquaculture products (including seaweed), representing approximately 78.7% of South Africa's total aquaculture production including seaweed. The projects also supported 2 289 jobs, of which 57.5% (1 316) were held by men and 42.5% (973) by women.¹⁰ Table 9 below summarises key milestones achieved by *Operation Phakisa* from 2015 to 2023:

¹⁰ DFFE, 2024. *Operation Phakisa: Unlocking the Oceans Economy through Aquaculture*.

Table 9: Key milestones of Operation Phakisa

2015	2016	2017	2018	2019
• Eight new land leases approved by Department of Public Works and Infrastructure. • Leases for 85 hectares of water space were granted or extended in line with the 15-year Marine Right by TNPA • NRCS and DFFE signed MOU for NRCS to undertake independent sampling. • Inaugural Interdepartmental Authorisation Committee (IAC) meeting held. • 140 hectares of water space approved for ten projects in Saldanha Bay for 15 years by TNPA. • Aquaculture Development Fund working group established. • Taiwan market opened for oysters. • Skills Working Group established for aquaculture. • Aquatic animal health and welfare implementation plan developed and approved	• Alien and Invasive Species (AIS) regulations amended for marine species (oyster and mussels). • Applicable to farms with a Marine Right and in existing areas, it did not require a risk assessment. • Aquaculture Development Bill introduced to NEDLAC. • CSIR started the Strategic Environment Assessment • EU conducts fact finding mission on abalone. • DFFE procures additional microscopes for shellfish monitoring programme.	• National feasibility studies for marine finfish, oysters and mussels completed. • EU Residues and Public Health team visit South Africa to audit the agricultural and aquaculture sectors. • National Residue Programme developed and implemented. • Aquaculture Development Bill signed off by NEDLAC. • First World Aquaculture Society Conference held in Africa, South Africa • DFFE signs MOU with Stirling University, first five local vets sent for master's degree in aquatic medicine. • Aquaculture Development Fund model and mechanism were completed. • Aquaculture Skills Inventory and Skills Analysis completed. • All remaining permits and Power of Attorney received for Qolora ADZ	• Saldanha Bay ADZ authorisation received, and Minister of Environment upheld the decision. • Aquaculture Farmer and Aquaculture Farm Assistant have been completed, approved by the QCTO and SAQA • Aquaculture Development Bill was approved by Cabinet. • Aquaculture Development Bill introduced to Parliament. • COEGA Aquaculture Development Zone EIA granted. • National feasibility studies for trout, abalone, catfish, freshwater, ornamentals, marron crayfish and aquaponics systems completed to inform new	• First Aquaculture Finance and Investment Seminar held in Durban. • A National Residue Programme developed and implemented for abalone, finfish, and bivalve as per the EU findings. • DFFE commissions the development of a transformation strategy and a small-scale aquaculture policy • Feasibility studies for hatcheries (research and demonstration) in the Northern Cape and Eastern Cape completed. • Coastal Waters Discharge Permit Regulation (CWDPR) 2019 published for implementation. • Algoa Bay ADZ: Pre-public consultation for the new Basic Assessment completed.

Table 9: Key milestones of Operation Phakisa

2015	2016	2017	2018	2019
		• Compulsory specification for live and chilled bivalve molluscs gazetted. • The Gariep Dam Aquaculture Training Centre officially handed over to South Africa • Value–stream mapping undertaken with recommendations to improve streamlining of authorization. • DFFE scoops award for best exhibition in China International Fishery & Seafood Expo (FISHEX) in Guangzhou, China.	entrants, funding agencies, policy, and investors. • Two DFFE members complete three months of training, and three vets complete one year of training at Stirling University • Establishment of the African Chapter of the World Aquaculture Society • Aquaculture Development Zones added as the ninth Operation Phakisa aquaculture initiative.	• DFFE completes a certification framework for aquaculture products in South Africa • Sea urchin export: risk assessment completed on cultured sea urchins for export purposes. • Public Awareness and Marketing Strategy for aquaculture products and the sector in South Africa completed. • New Aquaculture Development and Enhancement Programme (ADEP) guidelines published by the dtic. • Videography campaign launched showcasing local aquaculture species content on local airline.

(Source: DFFE, 2024. *Operation Phakisa: Aquaculture Workstream Year 2014 - 2024 Review*)

Table 9: Key milestones of Operation Phakisa

2020	2021	2022	2023	2024
• Twenty-eight (28) new projects have been assessed and incorporate as part of Operation Phakisa. • Small-scale aquaculture implementation plan was finalised as a technical guide for the small-scale aquaculture framework. • Engagement and internal consultation with industry and internal DFFE for the Aquaculture Development Bill. • Twelve EIAs completed and authorised; two appeals completed. • Seven coastal discharge permits issued. • Nine biodiversity risk assessments completed. • Seven land leases have been issued, and nineteen water leases were allocated and approved. • Funding to the value of R106 million was awarded by the MSC to WWF South Africa. • The aquaculture qualification for aquaculture farmer and aquaculture farm	• A virtual Aquaculture Finance and Investment Seminar took place in November 2021 due to COVID-19. Development funding institutions shared their funding requirements and aquaculture farmers shared their business experiences.	• The entanglement workshop trained industry on how to assist the South African Whale Disentanglement Network (SAWDN) in the event of a whale. • Entanglement in the Saldanha Bay ADZ. • Investors were sourced for mussel farms and processing facilities, which. • was vetted by the competition commission. • The Aquaculture Association of South Africa (AASA) Conference (AASA) was held at the University of Stellenbosch. • Promotional videos were developed for the Gariep Aquaculture Technology Demonstration Centre Aquaculture Research and Development unit. • DFFE hosted an investment pitching session hosted in collaboration.	• Cabinet approved the Bill in September 2023, following stakeholder consultations in all nine provinces and the Bill was gazetted for a 60-day public comment period. • Implementation Plan for the National Freshwater (Inland) Wild Capture Fisheries Policy approved. • Eight provincial consultations were undertaken during to establish an inland fishing access rights and authorisation system. • The EU audited South Africa's control system for live bivalve molluscs and the audit findings were shared with DFFE in November 2023. • Aquaculture Development Zone (ADZ) promotional campaign completed with videos developed	• The National Inland Fisheries Task Team convened in 2024, with pilot projects initiated at Flag Boshielo and Glen Alpine, an awareness campaign conducted in Mpumalanga, and resource mobilisation undertaken through consultations with provincial governments. • South Africa successfully met EU requirements for its bivalve aquaculture control plan, resulting in approval for exports of bivalve aquaculture products to the EU. • The 2024 Aquaculture Finance and Investment Seminar was held during the 15th Aquaculture Association of South Africa (AASA) Conference, attracting over 200 participants. • The Aquaculture Technology Demonstration Centre (ATDC) in Gariep Free State has trained approximately 1570 individuals from

Table 9: Key milestones of Operation Phakisa

2020	2021	2022	2023	2024
assistant was completed and approved by SAQA. • 432 Potential farmers and government officials were trained at China-South Africa ATDC. • The Standard Bank Group assisted in providing new market access during COVID-19. • Exemption on sale of undersized farmed abalone on the local market was approved with conditions. • DFFE and TAASA formed import/export working group to strengthen and diversify markets going forward. • Collaboration with the Department of Correctional Services on nutritional guidelines for the procurement of fish products was set in motion. The facilities to conduct the acceptability trials were identified, questionnaires developed, and the number of offenders and quantities were ascertained.		with the African Development Bank Group. Four investment-ready farms presented their business plans. • The Aquaculture Technology Demonstration Centre (ATDC) in Gariep Free State: approximately 1 324 individuals from 2014 to 2022 were trained and the aim is to broaden it to SADC countries. • The NRCS, DFFE and industry completed and submitted the EU pre-audit. questionnaire, this will be followed by a virtual audit in March. 2023. • Coastal lease and water use license were issued for Qolora ADZ. Extension of the Environmental Authorisation was granted and is valid until 29 September 2023. • Nine (9) biodiversity risk assessments were completed (Barramundi, Coho,	for four ADZs (Saldanha Bay, Coega SEZ, Algoa Bay and East London IDZ), and four social-media adapted videos and professional photographs were produced to attract local and foreign investors. • The Operation Phakisa Aquaculture Delivery Unit participated in the AFSIC Investing in Africa Conference in London. • Aquaculture investment opportunities were showcased during the South African Country Summit and Investment linkages were created for five aquaculture projects. • A farmed fish awareness programme was held in Gariep Dam.	2014 to 2024 with the aim to broaden it to SADC countries. • Three fish consumption awareness programmes conducted during 2024 to promote farmed fish and expand market awareness among consumers and the hospitality industry. • Farmed fish successfully listed in Department of Correctional Services (DCS) procurement specifications, creating opportunities for access to public sector markets.

Table 9: Key milestones of Operation Phakisa

2020	2021	2022	2023	2024
The Environmental Authorisation for Algoa Bay ADZ was issued.		King Salmon, Siberian Sturgeon, Rainbow Trout, Catfish, Nile Tilapia, Mozambique Tilapia and Common Carp).	- A second fish-tasting awareness event was held at Pelonomi Hospital. - Participation in the Africa Travel Indaba included a mussel and oyster tasting activation in May 2023. - Under the DSBD–DFFE MoU, a national call for interest was conducted as part of a small-scale aquaculture needs analysis, attracting over 600 expressions of interest from prospective and existing aquaculture farmers. - The Aquaculture Technology Demonstration Centre (ATDC) continued to build aquaculture capacity, training an additional 673 farmers, trainees, interns and government officials. - Tilapia fishcake trial conducted at the Devon Correctional Centre in	

Table 9: Key milestones of Operation Phakisa

2020	2021	2022	2023	2024
			April 2023 to support market access opportunities for locally farmed fish products.	

Notwithstanding these noteworthy milestones, there have been delays and challenges experienced by some aquaculture projects under Phakisa. In hindsight, the initial 5-year targets set in by the initiative were perhaps over-ambitious, and many targets have not been achieved, in part due to a different (i.e. more positive) economic climate, and due to high expectations around the production of finfish.¹¹ Other key challenges are discussed in the following section.

7.4 Challenges

South Africa's aquaculture industry is relatively small and faces several key challenges for growth in the industry. These challenges include:

- production focused on a few high-value species (such as abalone, oysters, mussels, finfish, and trout) driven mainly by the high cost of production;
- regulatory barriers and difficulty in accessing funding;
- access to domestic and international markets;
- limited pool of skills and inclusivity in the industry;
- fragmented research and development (R&D);
- limited and poor infrastructure (including facilities and roads) in rural areas;
- access to land and water space, as well as to seed and feed;
- scarcity of good quality freshwater and a harsh marine environment;
- unpredictability associated with climate change;
- vast difference between winter and summer temperatures;
- perceived competition with the tourism and conservation sectors;
- water and land lease disputes; and
- time-intensive authorisations, including delays around the issuance of leases and environmental impact assessments (EIAs)

7.5 Opportunities

The aquaculture industry was one of the priority growth areas in *Operation Phakisa-Oceans Economy*, highlighting its importance in the future growth of South Africa's oceans economy. Despite the abovementioned challenges, aquaculture offers material opportunity for further investment, jobs, and socio-economic value creation. Listed below are key opportunities identified for the industry:

¹¹ DFFE, 2019. *Operation Phakisa: Unlocking the Oceans Economy through Aquaculture*.

- Effective dialogue between market participants and providers of key inputs will lower the cost of business and relieve significant pressure on the sector, leading to increased expansion opportunities and investment;
- Stability of the industry and policy certainty will also facilitate growth in aquaculture through increased GDP;
- Poached abalone equates to three times the current production of farmed abalone. If initiatives linked to resource security are successful, there is potential to increase the sales value of abalone by approximately ZAR2 billion per annum. Access to poached volumes will also have the knock-on effect of increasing employment;
- Increased presence in high-value export markets (particularly in the EU and US) leading to increased value of the sector. This will stimulate growth of the industry and increase the effectiveness of local producers;
- Access to additional markets will stimulate further job opportunities in the medium to long-term.
- The increased access will decrease risks currently associated with operating in a single market;
- Effective dialogue between market participants and providers of key inputs will lower the cost of business and relieve significant pressure on the sector, leading to increased growth opportunities and investment;
- Lower operating costs will reduce the entry barriers of the sector and allow for increased inclusivity and transformation; and
- Should the economic climate and market stabilise, the industry has the option to expand existing species in current areas that are authorised, leased, suitable and available, particularly for abalone, bivalve, marine finfish, catfish, seaweed, trout, and tilapia farming. This expansion, in turn, could potentially increase annual production to approximately 68 650 tons and create 10 000 direct jobs in 10-years.

7.6 Skills and transformation

Despite the small size of the aquaculture sub-sector, it contributes significantly in terms of employee training and development. Currently, the abalone industry alone spends more than R9.5 million per annum on the training of its staff.¹² A significant milestone for capacity building and skills development was achieved in 2018 with the approval by the Quality Council for Trades and Occupations (QCTO) of

¹² DFFE, 2021. Internal Draft Report, November 2021. (Oceans Economy Master Plan Elements for The Aquaculture Sub Sector)

two aquaculture qualifications, namely 'Aquaculture Farmer' and 'Aquaculture Farm Assistant'. The qualifications are currently with South African Qualifications Authority (SAQA) for approval. Government also provides various training opportunities at various skill levels in South Africa's aquaculture industry, including:

- Supporting the China-South Africa Aquaculture Technology Demonstration Centre (ATDC) located near Gariep Dam in the Free State, which offers different aquaculture training and capacity building programmes;
- Partnering with local and international higher learning institutions that offer aquaculture qualifications, including with the University of Stirling based in Scotland for training of aquatic veterinarians and aquaculture specialists to address the scarce aquatic veterinarian skills and services currently available in South Africa; and
- Increasing the number of internships, bursaries, and experiential training.¹³

While these initiatives are critical, more interventions for training in both technical (breeding, animal husbandry, nutrition, and water quality), financial (to be able to source funding and investors), marketing, and management skills (manage aquaculture farm, and supervisory skills) are required to grow the sub-sector. Aquaculture is a highly technical industry. While South Africa has several large enterprises with the requisite technical expertise, there is currently limited information on how to operate and succeed with a small-scale aquaculture enterprise, particularly on matters such as logistics, marketing, packaging, and distribution.¹⁶³

Apart from key skills issues and gaps, the aquaculture industry also faces transformation challenges. The meaningful participation of Historically Disadvantaged Individuals (HDIs) and other previously marginalised groups (which includes black Africans, women, youth, and disabled individuals) in the industry is still limited. This was convincingly confirmed in *The South African Aquaculture Transformation Strategy*, a report commissioned by the then Department of Agriculture, Forestry and Fisheries (the then DAFF now DFFE) in 2019 to promote the involvement and contribution of HDIs to aquaculture, address the challenges that hinder their participation, support small-scale operations and ensure efficient transformation of the industry – while at the same time unlocking the growth potential of the sub-sector.

¹³ DFFE, 2023. *Aquaculture Yearbook 2023*.

¹⁶³ AgriSETA, 2020. *Aquaculture Sub-Sector Skills Plan 2020-2021*.

As Figure 13 below illustrates, South Africa's aquaculture industry demonstrates reasonable transformation in the workforce. Many employees are black Africans (61%), followed by Coloured (31%) and White (8%). However, the *Aquaculture Transformation Strategy* report found that around 80% of aquaculture farms are managed by Whites, while HDIs manage only 20%, of which 15% and 5% are Coloured and black African managers, respectively. The report also uncovered that most aquaculture farm-managers run these farms by virtue of being the owners, which implies that around 80% of all aquaculture farms in South Africa are owned by Whites. In sum, the *Aquaculture Transformation Strategy* concluded that the meaningful participation of HDIs as owners and managers of aquaculture farms is limited, and thus the aquaculture industry lacks meaningful transformation.¹⁶⁴

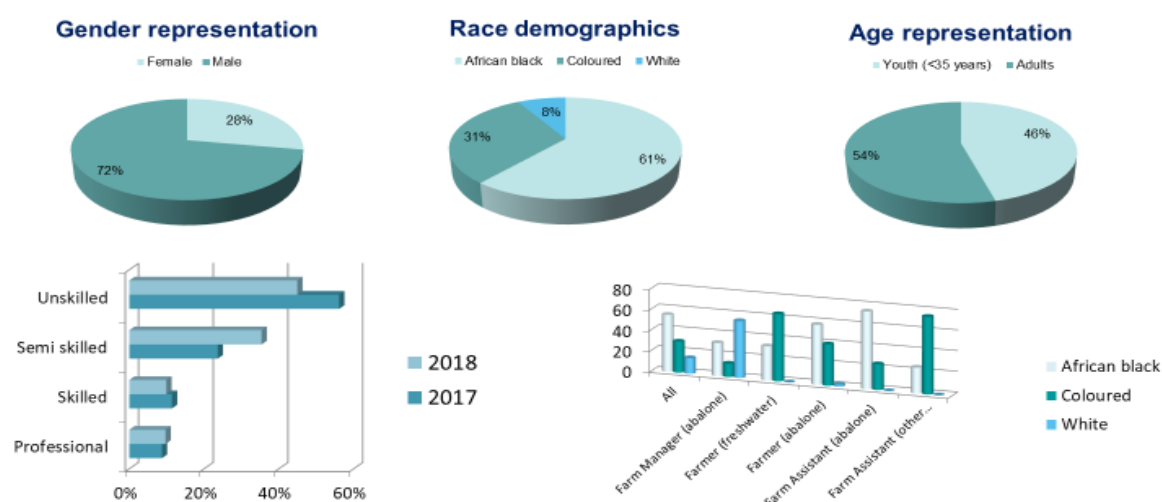


Figure 13: Aquaculture demographics profile

(Source: DFFE (2021), Internal draft report)

Critically, the *Aquaculture Transformation Strategy* also identifies six strategic interventions (or pillars) to help guide the transformation of aquaculture industry based on the key challenges identified in the report. These are:

- Pillar 1: Sustainable aquaculture production;
- Pillar 2: Ownership and management;
- Pillar 3: Skills development;

¹⁶⁴ DAFF, 2020. *The South African Aquaculture Transformation Strategy*, report commissioned by the (former) Department of Agriculture, Forestry and Fisheries (DAFF), Pretoria, August 2020.

- Pillar 4: Socio-economic empowerment and rural development;
- Pillar 5: Funding; and
- Pillar 6: Sector management and regulatory environment.¹⁶⁵

7.7 Research, development, and technology

As aquaculture is a technology-driven industry that relies on research, the DFFE established the Aquaculture Research and Technology Development Programme (ARTDP) in 2012 to help position South Africa as a leader in aquaculture development through investments in science, research, and development. The aim of the ARTDP is to provide an over-arching strategic framework for aquaculture research and technology development to ensure (i) diversification and competitiveness, and (ii) sustainable production. The purpose of the programme is to guide other government departments, academia, funding agencies and private sector on aquaculture research focus areas.¹⁶⁶ Critical research is being undertaken at various universities and research institutions, including the Agricultural Research Council (ARC). A key institutional expression for this imperative is the China-South Africa Aquaculture Technology Demonstration Centre (ATDC) in Gariep in the Free State province. Although initially co-established with China in 2006 as a fish hatchery, the facility was upgraded in 2013 to serve as a research, training, and demonstration centre on different freshwater fish species. Today, the ATDC continues to serve the freshwater aquaculture sector through training and promotion, demonstration of breeding and culture techniques as well as research activities. In terms of marine aquaculture research, the DFFE conducts key research in the field (coastal) or at the Marine Research Facility in Sea Point, Western Cape.¹⁶⁷

The DFFE itself is involved in conducting aquaculture research projects, ranging from product safety risks associated with fish production to developing innovative food sources. Other departmental research projects have focused on reducing costs of production and feed, as well as technology development of new indigenous species. Big strides furthermore have been made in terms of culture technology of sea urchins, with pilot trials currently being conducted on commercial farms. In terms of environmental sustainability, research has been conducted on food safety, aquatic animal health and impact of the

¹⁶⁵ DAFF, 2020. *The South African Aquaculture Transformation Strategy*.

¹⁶⁶ DAFF, 2012. *Aquaculture Research and Technology Development Programme for South Africa*, Directorate: Fisheries: Cape Town, July 2012.

¹⁶⁷ DFFE, 2020. *Aquaculture Yearbook 2020*.

environment on aquaculture (e.g. Harmful Algal Blooms), as well as the overall impact of aquaculture on the environment.¹⁹

7.8 Environmental and social sustainability

Aquaculture relies on good quality environment for its sustainability, growth, and competitiveness. An increased understanding and monitoring of the interactions between aquaculture and the environment are therefore required for effective management. The DFFE Directorate: Aquaculture Innovation and Technology Development has a dedicated environmental unit which focuses on (i) addressing the suitability and assimilative capacity of different environments to various aquaculture practices, and (ii) addressing the impacts of aquaculture practices on the environment. Sustainable aquaculture development implies optimizing the social and economic benefits arising from the use of natural resources, while protecting the biological diversity and maintaining the ecosystem function.

The aim of the D: AITD is to provide scientific research and advice towards the development and sustainable management of the aquaculture sector and has the following key functions:

- Undertake aquaculture research that supports development of ecologically sustainable aquaculture, in other words, environmental interactions, fish health & diseases, products safety.
- Provide support for diversification competitiveness for the aquaculture sector, in other words, genetics research, new species, productions systems, culture technology development and transfer, design and implement pilot/demonstration projects, nutrition and feed development, markets and post-harvest technology.
- Provide scientific advice to support the developing aquaculture sector.
- Develop and manage stakeholder networks, committees, forums, and institutional support pertaining to aquaculture research.
- Establish and convene an Aquaculture Scientific Working Group.
- Collaboration with local and international research institutions for advancing aquaculture research and development.
- Development and dissemination of scientific information through publications, technical reports, manuals, and guidelines.

¹⁹ 20 CSIR, 2020. Strategic Environmental Assessment for Aquaculture Development, available at: <<https://aquasea.csir.co.za/>>

Over the years, the aquaculture industry in South Africa has developed “best management practices” to minimize potential biological impacts and environmental degradation from aquaculture farming. This includes:

- Evaluating and mitigating impacts in terms of an environmental assessment (i.e. Environmental Impact Assessments or EIAs);
- Understanding the impacts of climate change;
- Conducting a country-wide Strategic Environmental Assessment (SEA) to identify suitable marine and freshwater areas where environmentally sustainable aquaculture development can be prioritised and incentivised; and
- Identifying land and sea-based sites earmarked specifically for aquaculture activities known as Aquaculture Development Zones (ADZs).

The AquaSEA was conducted at a national scale and included all nine provinces. The AquaSEA assessed and identified environmental attributes, specific siting criteria and key impacts associated with both marine and freshwater related activities of aquaculture planning, development, and operations. The assessment considered natural (offshore, inshore, and inland) and land-based systems operating in cold/temperate and warm waters. Candidate species considered during the assessment included: abalone, mussels, oysters, prawns, seaweed, tilapia, trout, and marine finfish (e.g. Kob and salmon). The AquaSEA process reviewed existing legislation, including licensing/permitting and authorisations procedures currently governing marine and freshwater aquaculture on a national and provincial scale.²⁰

The primary purpose of ADZs is to create an enabling environment for aquaculture to develop and expand in a sustainable manner. The key benefits of ADZs are to:

- encourage investor confidence;
- create incentives for industry development;
- provide aquaculture services;
- manage the risks associated with aquaculture;
- job creation;
- skills development;

²⁰ CSIR, 2020. *Strategic Environmental Assessment for Aquaculture Development*, available at: <<https://aquasea.csir.co.za/>>

- empowerment of rural communities; and
- benefit from Special Economic Zones (SEZs) incentives.

Government's main role in ensuring the development of ADZs is to:

- negotiate and obtain consent from the landowners;
- undertake EIA processes;
- develop sites with appropriate basic infrastructure (such as roads, electricity, security fences, reservoirs, and water pumps); and
- establish support facilities (including processing establishments and laboratories).

At present, the Eastern Cape has the highest number of identified ADZs in the country (4), followed by KZN (2) and the Northern Cape and Western Cape (1 each). Some zones, such as the Saldanha Bay ADZ and the Algoa Bay ADZ, are fully operational, have suitable infrastructure, and employ a significant number of workers, while others still require feasibility studies and Environmental Authorisations (EA) before implementation. A more detailed breakdown of ADZs in South Africa is provided in Table 10 below:

Table 10: ADZs in South Africa

Aquaculture Development Zone	Description
Coega Industrial ADZ (Eastern Cape) – Provincial project	Area: 440 ha (land-based zone) Targeted species: Marine and freshwater finfish, abalone Current status: No farming is taking place. Potential production: Approximately 40 000 tons per annum The EA has been granted for the development and operation of the Coega Land based Zone 10 Aquaculture Development Zone in the Coega Industrial Development Zone. A separate EIA for the Marine Pipeline was undertaken which supply's the ADZ with sea water and help with discharge. Detailed design for bulk services for the ADZ being finalised and the Geotechnical investigations completed for bulk service installation took place in 2020.

Aquaculture Development Zone	Description
East London Industrial development Zone (Eastern Cape) – Provincial project	Area: 32 ha (land-based zone) Targeted species: Marine and freshwater finfish, abalone, and seaweed Current status: The previous facility operating as a hatchery and started production of dusky kob. The facility has since closed but was able to produce yellowtail and oysters. Potential production: Approximately 10 000 tons per annum
Qolora ADZ (Eastern Cape) – DFFE project	Area: 26.4 ha (land-based zone) Targeted species: Marine finfish, abalone, and seaweed Current status: No farming is taking place. The Department is currently seeking funding to support the development of basic infrastructure and has initiated clearance of vegetation on site to trigger commencement of the EA. The issuing of long-term leases by DLRRD is still to be finalised. Potential production: • Possibility of developing two 300 tons abalone/seaweed farms and a combination of fish farms. Total production capacity expected is as follows: ○ 600 tons of abalone production capacity (integrated abalone/seaweed farming) at 11 – 12 m above sea level. ○ 5 500 tons of finish at 15 – 25 m above sea level
Algoa Bay ADZ (Eastern Cape) – DFFE project	Area: 1 146 ha (sea-based zone) Targeted species: Marine finfish, oysters, and mussels Current status: One farm is operational in the Port Elizabeth Harbour (Algoa 6). The EA was granted on the 26 February 2020, and the ADZ was initiated with the establishment of the AMC and the CF as well as the appointment of the ECO. The subdivision of the precincts into lease areas is underway through the initiation of an ADZ leasing framework which will guide the process going forward with all ADZs. Potential production:

Aquaculture Development Zone	Description
	• Algoa 1: 218 ha of mussel production (approximately 6 mussel farms) and 94 ha of oyster production. A viable mussel operation requires an annual production volume of +/- 500 tons and approximately 38 ha of space. • Algoa 6: 479 ha - approximately 16 oyster farms • Algoa 7: 355 ha – Three finfish operators produced 1 000 tons in the first year of the pilot study and up to 9 000 tons by year three.
Vanderkloof Trout ADZ (Northern Cape) – DFFE project	Area: 2nd largest dam in SA Targeted species: Freshwater finfish (trout) Current status: No farming is taking place. Potential production: Approximately 11 518 tons per annum
Saldanha Bay ADZ (Western Cape) – DFFE project	Area: 464 ha of currently allocated area exists in the ADZ, of which 151 ha were operational in 2018. With a further 420 ha area for new production. Targeted species: The following species are considered for farming in the ADZ: • Currently cultivated bivalve species: ○ Pacific oyster ○ Mediterranean and Black mussel • New indigenous shellfish species: ○ Abalone ○ South African scallop • New indigenous finfish species: ○ White Stumpnose ○ Kabeljou ○ Yellowtail • Alien finfish species: ○ Atlantic salmon ○ Coho salmon ○ King/Chinook salmon

Aquaculture Development Zone	Description
	○ Rainbow and Brown trout ○ Seaweed Current status: • Twenty-seven aquaculture farmers produce approximately 3,360.78 tons of mussels and oysters in the bay. • 754 jobs have been created in the bay. • The Environmental Authorisation was granted in January 2018 however appeals process was entered and concluded in 2019. The ADZ is currently in the 7th Year of implementation (2025) from February 2025 –January 2026. Future growth: • Environmental authorisation to increase production to 15 000 tons. • The ADZ plans to increase the number of direct jobs to +/- 2500 (5-fold increase) • 255 ha of new water space was allocated to new entrants (primarily PDI's and SMME's) Production limits • Limited to 15 000 tons per annum of shellfish (in a phased approach) • Finfish production limited to 1000 tons per annum. • Finfish production can achieve up to 5000 tons per annum over five years

(Source: DFFE, Aquaculture Yearbook 2024)

7.9 Policy considerations

The DFFE is the lead department in the development and management of the aquaculture industry. However, as discussed below, the current legislative framework governing aquaculture activities in South Africa is fragmented and regulated by various departments for both marine and freshwater sectors. In

2012, recognising both the potential for aquaculture to benefit South Africans and the need to create a more enabling regulatory environment, the then Department of Agriculture Forestry and Fisheries (the then DAFF) drafted the *National Aquaculture Strategic Framework* (NASF), which provided a road map to help government facilitate the development of the industry. The *National Aquaculture Policy Framework* (NAPF) was subsequently developed in response to the NASF to, *inter alia*, encourage an integrated and more holistic approach to aquaculture development, which promotes greater participation, inter-governmental coordination, and partnerships. In 2014, Initiative 2 of the *Phakisa* Aquaculture Lab, which focused on 'Legislative Reform' in the industry, aimed to amend legislation to streamline the assortment of existing regulations and create an enabling environment to promote aquaculture sector growth.

A more recent legislative review from the DFFE established there are over 30 pieces of legislation that are applicable to aquaculture. The review also underlined that aquaculture is currently positioned alongside fishing under the Marine Living Resources Act 18 of 1998 (MLRA), and operators thus require a 'right' to farm - this is viewed as a potential barrier for entry for new small-scale farmers. Therefore, the recommendation from the legal review was to have one piece of dedicated legislation for aquaculture to streamline all authorisations, thereby reducing the administrative burden on the industry. This eventually resulted in the introduction of the *Aquaculture Development Bill* (the 'Bill') in 2018, which specifically aims to streamline aquaculture authorisations and institutional arrangements. Following extensive reviews, the Bill is expected to be tabled before Cabinet in the 2026/27 financial year.

7.10 Targets and interventions through to 2035

The aquaculture sub-sector of South Africa's oceans economy has the potential to make a significant contribution to economic development, enterprise development, job creation, empowerment, environmentally sustainable fish production and food security in the country. In this regard, growth projections estimate that total revenue contribution of aquaculture to South Africa's oceans economy could increase to almost R4 billion in 2035 and contribute between 10 000 and 15 000 direct jobs (excluding value chain employment).

Tabled below is the *Aquaculture Sub-Sector Plan* relating to South Africa's Oceans Economy. The scope of the plan spans three strategic thrusts through to 2035 that collectively aim to realise the abovementioned economic growth targets.

The first strategic thrust (0-2 years) will aim to bring about short-term stability to the sub-sector following the negative impacts of the COVID-19 pandemic, which include escalating costs. The interventions planned for this initial period will aim at increasing local demand and supply through increasing effectiveness and efficiency. Once the sub-sector has stabilised, it can be revived from various interventions implemented in the next strategic thrust (2-5 years).

The next phase (2-5 years) will see the introduction of currently researched species and innovations to mitigate high-energy and related operating costs. This will include the activation of a centralised online permitting system, which is expected to advance the industry's transformation agenda, increase beneficiation levels, and improve resource governance.

Another key focus of this revival phase will be the creation of an enabling legislation, policy, and regulatory environment, which will aim to further advance growth, transformation, and sustainability in the sub-sector. This effort will be supported further by:

- increasing the effectiveness and efficiency of value-chains;
- increasing investment to aid ailing infrastructure, including the power grid, road, and transport infrastructure;
- increasing research and development capacity; and
- ensuing responsive funding instruments.

Once the aquaculture industry has been stabilised and revived, the third and final strategic thrust (5+ years) will focus on increasing the size of the industry in a manner which balances economic and environmental sustainability, whilst at the same time also mitigating the impact of climate change. Growth in the sub-sector and increasing production capacity is expected to be advanced by:

- bringing new repurposed aquaculture sites online;
- expanding offshore production capacities; and
- developing a network of new research and demonstration centres and incubators.

The interventions to stabilise, revive and grow the sub-sector to 2035 are detailed below.

Oceans Economy Master Plan Working Group 3

Aquaculture 14/07/2026 Master

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Access to land and water sites (Two dams prioritised for aquaculture)	Establish new commercial sites for aquaculture and ensure access to existing sites and infrastructure in collaboration with government (DFFE, DLRRD, DPWI, DWS, Municipalities), industry and community constituencies, to identify and prioritise two dams to cater for aquaculture.	X			Two dams prioritised for aquaculture.	Lead: DWS and DFFE Fisheries Support: DPWI, DLRRD, Provinces, industry, Municipalities
Access to land and water sites (Resource Management Plan)	DWS to develop a Resource Management Plan (considering the environment and socioeconomics, including carrying capacity) for prioritised dams.		X		Resource Management Plan developed for two dams.	Lead: DWS and DFFE Fisheries Support: DPWI, DLRRD, Provinces, industry, Municipalities
Access to land and water sites (Access to land and sea-space)	Increase access to sites DFFE to negotiate with respective departments (DPWI, DWS, DLRRD) and institutions (TNPA) for access to land/sea space for aquaculture purposes.		X		Land and sea space negotiated, and lease agreements concluded (15-year leases).	Lead: DFFE Fisheries Support: DPWI, DWS, TNPA, DMRE, DLRRD, Provinces, industry
Access to land and water sites	Identify sites and increase access to new and existing			X	New and existing ADZ sites identified.	Lead:

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
(ADZs)	Aquaculture Development Zones (ADZs). This includes a call for expression of interest from investors to secure investment within the ADZs.				One (1) ADZ site declared, a call for expression of interest advertised, and investments secured.	DFFE Fisheries and competent authorities Support: DPWI, DWS, TNPA, DMRE, DLRRD, Provinces, industry
Access to land and water sites (SEA implementation)	Implementing Phases 2 and 3 of the Strategic Environmental Assessment (SEA).			X	Finalised Phase 2 of SEA (gazetting of the identified zones). Phase 3 of SEA by developing a checklist and Environmental Monitoring Plans (EMPrs). Regulations developed for the SEA.	Lead: DFFE Branch Regulatory, Compliance, and Sector Monitoring Support: DFFE Fisheries, DPWI, DWS, TNPA, DMRE, DLRRD, Provinces, industry, Municipalities
Research Innovation, and diversification (New candidate species)	Identify and investigate new species and technology to diversify the existing portfolio by developing three (3) new and indigenous species and piloting in collaboration with the aquaculture sector and associations (e.g. sea urchins,			X	Three (3) new candidate species developed and piloted. Market and socioeconomic research undertaken	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	mullet, clams, kelp, and mud crabs).				on new candidate species.	
Research Innovation, and diversification (Enhancement of currently farmed indigenous species)	Advancement and improvement of currently farmed indigenous aquaculture species.			X	Enhancement of one (1) indigenous species currently being farmed.	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges
Research Innovation, and diversification (Improvement of technologies)	Identify, develop and/or improve efficient technologies for the husbandry, energy, feed, health, processing of local and indigenous species.			X	Technologies developed and/or improved for husbandry, health, and processing of local and Indigenous species. Local and Indigenous species to include abalone cage culture, urchin hatchery and grow out, oyster hatchery and nursery,	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					seaweed hatchery and grow out.	
Research Innovation, and diversification (IMTA)	Integrated Multi-Trophic Aquaculture (IMTA) and ecosystem-based management strategies to pilot new technologies for sea-based species (kelp/seaweed, finfish, and cage culture for abalone).			X	Feasibility and opportunities for sea-based technologies assessed for one species (kelp/seaweed, finfish, and cage culture for abalone). Establish three (3) IMTA projects piloted.	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges
Research Innovation, and diversification (Research into sterile same-sex offspring)	Research into sterile, same sex offspring (tilapia/catfish/trout) to enable access to new sites.			X	Three (3) species researched on with regards to sterile, same sex offspring.	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges
Research Innovation, and diversification (Aquaculture Research Strategy)	Review and implement Aquaculture Research Strategy.	X			Aquaculture Research Strategy finalised.	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Research Innovation, and diversification (Market research)	Conduct continuous market research to identify market opportunities.			X	Market opportunities identified.	Lead: DFFE Fisheries Support: DSI, TIA, ARC, industry, universities, TVET Colleges, the dtic, NAMC
Research Innovation, and diversification (Climate change stakeholder consultation)	Climate change adaptation, resilience, and mitigation stakeholder consultation conducted to refine the climate change mitigation and adaptation plan per geographical areas (renewable and non-renewable resources).	X			Stakeholder consultations conducted.	Lead: DFFE Fisheries Support: Industry, universities, Provinces
Research Innovation, and diversification (Climate change adaptation plan)	Implementing climate change mitigation and adaption plan.			X	Climate change mitigation and adaptation plan refined and implemented.	Lead: DFFE Fisheries Support: Industry, universities, Provinces
Research Innovation, and diversification (Climate change research)	Research into climate change mitigation and adaptation relating to aquaculture operations. Monitor and report the impact of the climate change and mitigation and adaption plan.			X	Research conducted into climate change mitigation and adaption (reports produced).	Lead: DFFE Fisheries Support: Industry, universities, Provinces

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					Monitoring and impact report developed.	
Research Innovation, and diversification (Alternate energy sources)	Alternative energy sources identified including participation to provide support on platforms to address alternative energy sources for aquaculture to relieve dependency on hydrocarbon produced energies.	X			Participation on platforms to address alternative energy sources for aquaculture. Alternative energies may include solar energy, wind energy, and bioenergy.	Lead: DFFE Fisheries Support: Industry, universities, Provinces, SOE's, NCRS
Environmental sustainability (Abalone ranching)	Support development of abalone ranching by developing and implementing a collaborative model to address stock security for abalone ranching, including the management of confiscated abalone (i.e. Northern Cape ranching areas).	X			Model to address stock security for abalone ranching and management of confiscated abalone developed.	Lead: Industry and communities Support: DFFE Fisheries, universities, Provinces, Municipalities, SAPS
Environmental sustainability (Spat of abalone ranching)	Partner within industry to provide spat for ranching operations.	X			Spat provided to industry for ranching operations.	Lead: Industry and communities Support: DFFE Fisheries, universities,

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
						Provinces, Municipalities
Environmental sustainability (Water quality monitoring)	Implement coastal water quality monitoring to provide an early warning system and manage food safety of products by developing a coastal water quality monitoring early warning system.	X			Coastal water quality monitoring early warning system developed.	Lead: DFFE Branch Oceans and Coast Support: DFFE Fisheries, industry, universities, Provinces, NRCS, laboratories
Environmental sustainability (Implement the AMFFSP)	Implement the Aquacultured Marine Fish Food Safety Programme (AMFFSP) within the coastal provinces.		X		AMFFSP implemented.	Lead: DFFE Fisheries and NRCS Support: Industry, universities, Provinces, NRCS, laboratories
Environmental sustainability (Funding models)	Investigate alternative funding models to support food safety testing costs.			X	Alternative funding models investigated.	Lead: Industry associations Support: Industry, universities, Provinces, NRCS, laboratories
Environmental sustainability	Implement the dried abalone compulsory specifications (VC9108).			X	Dried abalone compulsory specifications	Lead: NRCS

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
(Dried abalone compulsory specification)					(VC9108) implemented.	Support: DFFE Fisheries, industry, Municipalities, Provinces, ITAC, DIRCO, the dtic
Environmental sustainability (Accreditation of laboratories)	The development of accredited laboratories and reference laboratories capacity for food safety and aquatic animal health (i.e. food contaminants and drug-residue analysis).			X	Accredited laboratories established. Reference laboratory capacity developed. Veterinary medicines and environmental residues validated and accredited.	Lead: Private sector, industry and DFFE Fisheries Support: Universities, SAIMI, Municipalities, DoA, the dtic, NRCS, Provinces
Environmental sustainability (Norovirus)	Ensure compliance with Norovirus international requirements.			X	Norovirus capacity and support provided to industry.	Lead: DFFE Fisheries and NRCS Support: Universities, SAIMI, Municipalities, the dtic, industry, Private Laboratories, Provincial Laboratories

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Market development and Trade (Public Awareness and Marketing Strategy)	Implement marketing and awareness strategy by revising existing Public Awareness and Marketing Strategy for Aquaculture Products and the Sector in South Africa (and include the informal market)	X			Public Awareness and Marketing Strategy for Aquaculture Products and the Sector in South Africa revised and implemented.	Lead: DFFE Fisheries and Aquaculture Marketing Working Group Support: DSBD (SEDFA), universities, DHET, SAIMI, DLRRD, Municipalities, the dtic, SAIMI, NRCS, DHET, industry, Provinces, Hospitality and retail, ITAC, DIRCO, DCS, DoH, SANDF and Provincial Investment Promotion Agencies
Market development and Trade (Aquaculture products listed on government procurement specifications)	DFFE to support/facilitate access for preferential procurement within government departments (e.g. Department of Correctional Services; Department of Health including Department of Basic Education).		X		Aquaculture products listed on some of the government procurement specifications.	Lead: DFFE Fisheries Support: DSBD (SEDFA), universities, DHET, SAIMI, Municipalities, the dtic, SAIMI, NRCS, DHET, industry, Provinces,

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
						Hospitality and retail, DCS, DoH, SANDF and DBE
Market development and Trade (Local and international markets)	Reviewing the trade desk support structures and utilising existing trade desks to facilitate export market access for new and existing farmers.	X			New local and international markets accessed.	Lead: The dtic Support: DFFE Fisheries, DSBD (SEDFA), SAIMI, DoA, SAIMI, NRCS, industry, ITAC, DIRCO and Trade Desks and Provincial Investment Promotion Agencies
Market development and Trade (Market intelligence and export development)	Provide technical support to industry and associations to comply with local and export market requirements.	X			Research undertaken to understand import requirements for current and future international markets. Market insight and market intelligence attained, and investment missions conducted. Various products diversification, and	Lead: NRCS and DFFE Fisheries Support: DSBD (SEDFA), SAIMI, DoA, the dtic, industry, Provincial Investment Promotion Agencies, ITAC, DIRCO

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					value addition opportunities investigated.	
Market development and Trade (Product certification)	Technical support towards a globally recognised monitoring and certification system through the development and support required for food safety and animal health monitoring and control capacity to alleviate challenges relating to trade requirements and access to new markets.			X	Certification procedures aligned to local and international standards. Existing local and international markets sustained. Two international markets opened (e.g. EU, Russia) for increased industry exports. Encourage industry uptake of internationally recognised third party certification schemes (e.g. MSC, ASC) to improve market access and competitiveness.	Lead: DFFE Fisheries, NRCS and DoA Support: Universities, DHET, SAIMI, Municipalities, the dtic, industry including processors, Provinces, ITAC, DIRCO

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					Current legislation applicable to aquaculture food safety and aquatic animal health updated.	
Market development and Trade (Product traceability)	Develop the aquaculture products traceability protocol and assess technologies to advance product traceability.			X	Aquaculture products traceability protocol developed, and technology assessed.	Lead: DFFE Fisheries Support: NRCS, industry, Provinces, DoA
Market development and Trade (Aquaculture tariff systems)	Aquaculture Tariff System to be identified, assessed and reviewed on imported and exported aquaculture products.			X	Need for tariffs on imported products identified, and aquaculture tariff structure affected by certain imports reviewed and implemented. Increased local market share and deterrent of import products by the industry. Export tariffs reviewed and	Lead: The dtic Support: DFFE Fisheries, industry, ITAC, DIRCO

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					favourable trading terms negotiated with countries for export.	
Skills and capacity development (Research demonstration centres)	Establish research and demonstration centres (including state-owned hatcheries) by identifying potential sites/ facilities for the research, incubator, and demonstration centres (including state-owned hatcheries).		X		Sites and facilities for the research, incubator, and demonstration centres identified (revitalised, existing, and/or newly established). Feasibility studies for identified sites conducted and outcomes implemented.	Lead: DFFE Fisheries Support: Industry, Provinces, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC, universities, DWS, DPWI, TNPA, DoA, DLRRD, SETAs
Skills and capacity development (Seed supply partnerships)	Secure partnerships for seed supply from state-owned hatcheries.			X	Partnerships established and seed supplied.	Lead: DFFE Fisheries Support: Industry, Provinces, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC, universities, DWS, DPWI, TNPA, DoA, DLRRD, SETAs

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Skills and capacity development (State-owned hatcheries)	Establish/revitalise state-owned hatcheries.			X	Two (2) functioning optimal state-owned hatcheries established. Increased number of small-scale aquaculture farmers supported through seed supply.	Lead: DFFE Fisheries Support: Industry, Provinces, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC universities, DWS, DPWI, TNPA, DoA, DLRRD, SETAs
Skills and capacity development (Incubators, research and demonstration facilities)	Collaborate to conduct research at revitalised, existing, or newly established research and demonstration facilities, (including hatcheries within the facilities).			X	Two new incubators established (including hatcheries within the facilities). Research conducted at existing, or the two (2) newly established research and demonstration facilities (including hatcheries within the facilities). Research and skills development undertaken and	Lead: DFFE Fisheries Support: Industry, Provinces, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC, universities, DWS, DPWI, TNPA, DoA, DLRRD, SETAs

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
					collaborated with academic institutions.	
Skills and capacity development (Extension and veterinarian services)	Provide extension and veterinarian services.			X	Extension Services in all nine (9) provinces provided. Veterinary services in all nine (9) provinces provided.	Lead: DFFE Fisheries and DoA Support: Industry, Provinces (Agriculture), Municipalities
Skills and capacity development (Small-scale Aquaculture Clusters)	Small-scale aquaculture clusters provided with advisory services and support towards small-scale aquaculture clusters.		X		Annual webinar series conducted for advisory services to targeting the small-scale operators. Twenty (20) farmers supported on an annual basis. Small-scale aquaculture clusters established and supported. Aquaculture incubation hubs created.	Lead: DFFE Fisheries Support: Provinces, industry, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC, universities, DWS, DoA, DPWI, TNPA, DLRRD, SETAs

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Skills and capacity development (Feed production)	Increase fish feed production by identifying technologies and equipment to produce feed and develop feed production plants.			X	Established and operational aquaculture feed plants set to supply small-scale farmers with affordable feed.	Lead: DFFE Fisheries Support: Industry, Provinces, Municipalities, the dtic, DSBD (SEDFA), DPWI, universities, ARC, DoA
Skills and capacity development (Traceability protocol)	Develop and review the traceability procedure for feed.			X	Traceability protocol developed and reviewed.	Lead: DFFE Fisheries Support: Industry, Provinces, universities, DoA
Skills and capacity development (Skills programme)	Aquaculture upskilling by developing an upskilling programme through the research and demonstration centre incubators and hatcheries.		X		Skills programme developed, training assistance provided and implemented. Training manuals across the value chain developed.	Lead: DFFE Fisheries Support: DFFE (other branches), Provinces, industry, Municipalities, the dtic, DSBD (SEDFA), SAIMI, DHET, ARC, DoA, universities, SETAs

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Skills and capacity development (Research and training facilities)	Increase research and development capacity by assessing current aquaculture research and training facilities nationally (establishment of baseline).	X			Increased access to existing research and training infrastructure.	Lead: DFFE Fisheries Support: Provinces, industry, Municipalities, DSBD (SEDFA), SAIMI, DHET, ARC, universities, SETAs
Skills and capacity development (Collaboration with academic institutions)	Developing collaboration with universities.		X		Collaboration with universities established.	Lead: DFFE Fisheries Support: Provinces, industry, Municipalities, DSBD (SEDFA), SAIMI, DHET, ARC, universities, SETAs
Skills and capacity development (QCTO accreditation)	Advance aquaculture sustainable skills system to ensure Quality Council for Trades and Occupations (QCTO) accreditation for training in the aquaculture sector.			X	One (1) QCTO accreditation obtained in the aquaculture sector.	Lead: Agri-SETA Support: DFFE Fisheries, Provinces, industry, SAIMI, DHET, ARC, universities, TVET Colleges

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Skills and capacity development (SETA accreditation)	Ensuring all commercial aquaculture enterprises provide SETA-accredited training.			X	All training provided accredited by SETA.	Lead: Agri-SETA Support: DFFE Fisheries, Provinces, industry, SAIMI, DHET, ARC, universities, TVET Colleges
Skills and capacity development (Integration of aquaculture modules)	Integrate aquaculture modules in aquaculture-related qualifications at South African institutions of higher learning.			X	Aquaculture modules integrated into related qualifications at South African institutions of higher learning.	Lead: DHET Support: DFFE Fisheries, Provinces, universities, TVET Colleges
Skills and capacity development (Aquaculture learnership programme)	Implement a bursary programme, complemented by an internship/work placement or in-service programme.			X	Aquaculture internship programme and industry bursary implemented.	Lead: DFFE Fisheries and DHET Support: DoA, Provinces, industry, SAIMI
Skills and capacity development	Establish international skills development partnerships.			X	International skills development partnerships developed, and	Lead: DFFE Fisheries Support:

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
(International skills programme)					training programmes facilitated.	DIRCO, Provinces, industry, SAIMI, DHET, DoA
Funding and enterprise development (ADZ infrastructure development)	Support the development of suitable bulk infrastructure for Aquaculture Development Zones (ADZs) through the assessment and prioritisation of infrastructure requirements.		X		Needs analysis conducted. Identify possible sources of funding. Funding sourced and secured for at least one (1) ADZ.	Lead: DFFE Fisheries, ELIDZ, Coega Development Corporation, TNPA, the dtic Support: NT, DLRRD, DPWI, DoA, DWS, Provinces, Municipalities, industry
Funding and enterprise development (Financial instruments)	Review and improve funding in the aquaculture sector by reviewing financial instruments and criteria.		X		Financial instruments reviewed. Small-scale funding instruments developed with Development Finance Institutions (DFIs). Investment and funding into the sector (Private and government).	Lead: ADF Working Group and DFFE Fisheries Support: NT, DFIs, Landbank, industry, the dtic, DoA, DLRRD, DSDB (SEDFA), Provinces

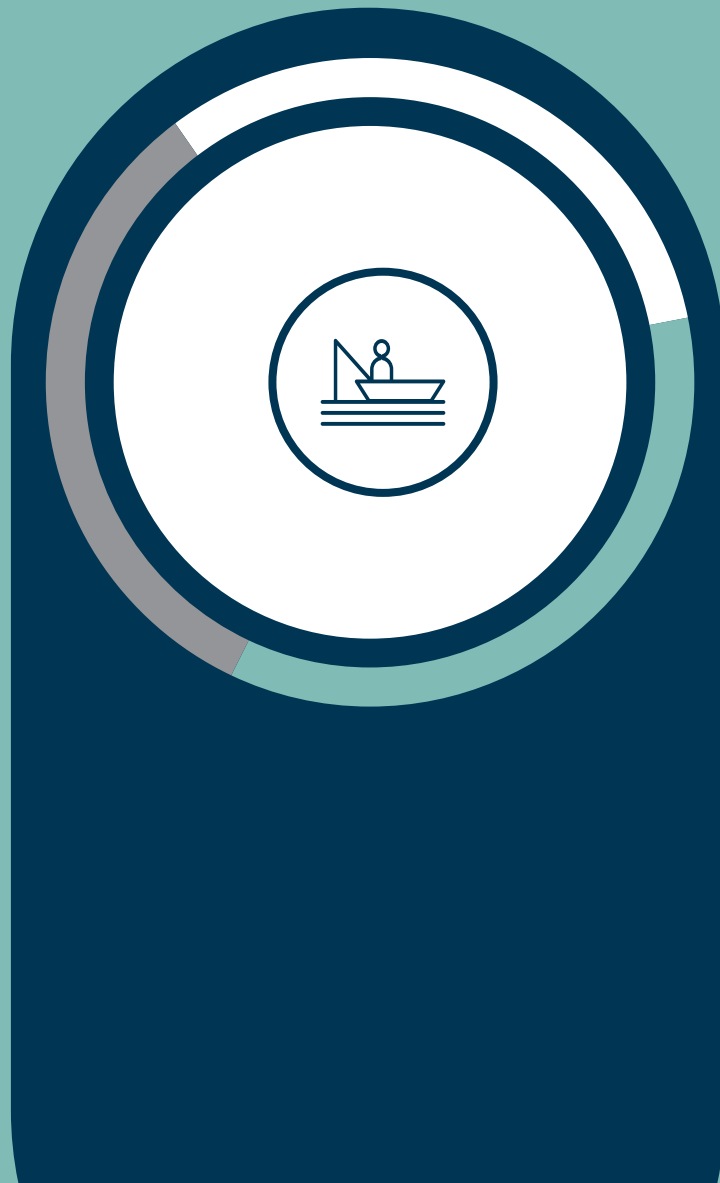
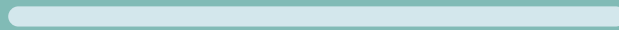
Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
Funding and enterprise development (ADF model)	Reviewing the Aquaculture Development Fund (ADF) model.		X		ADF model reviewed and updated.	Lead: ADF Working Group and DFFE Fisheries Support: NT, DFIs, Landbank, industry, the dtic, DoA, DLRRD, DSDB (SEDFA), Provinces
Regulatory reform (Centralised online permitting)	Develop and implement an online e-permitting system.		X		Online e-permitting system developed and operational.	Lead: DFFE Fisheries Support: Industry, the dtic, DLRRD, DSDB (SEDFA), DFIs, Provinces, DWS, SITA, TNPA,
Regulatory reform (Aquaculture Development Act)	Develop enabling legislation, policy, and regulations by promulgating the Aquaculture Development Act.		X		Aquaculture Development Act promulgated and implemented.	Lead: DFFE Fisheries Support: Government Departments, industry, Provinces, Municipalities
Regulatory reform. (NEMA and NEMBA)	Reviewing and publishing NEMA thresholds (if applicable) and reviewing		X		New NEMA thresholds published and NEMBA	Lead: DFFE Branch Regulatory,

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
	categorisation of aquaculture species (NEMBA).				categorisations published.	Compliance and Sector Monitoring Support: DFFE Fisheries, Government Departments, industry, Provinces, Municipalities
Small-scale support programme (Small-scale aquaculture programme)	Ensure support to small-scale aquaculture by implementing the Small-scale Aquaculture Programme.	X			Study conducted to identify small-scale farmers, and baseline information collected. Small-scale farmers and producers supported with extension services. Training to capacitate small-scale farmers provided.	Lead: DFFE Fisheries Support: Provinces, Municipalities, the dtic, ARC, universities, DSDB (SEDFA)
Small-scale support programme (Markets for small-scale)	Ensuring the provision of market related information for small-scale aquaculture industry.		X		Markets established for small-scale farmers and producers.	Lead: DFFE Fisheries Support: Provinces, Municipalities, the dtic, ARC,

Focus Area	Interventions	Implementation Time Frame (years)			Target(s)	Institutions
		1-2	3-5	5+		
						universities, DSDB (SEDFA)

SUB-SECTOR PLAN

FISHERIES



8. Fisheries Sub-Sector Plan

The Food and Agriculture Organisation (FAO) of the United Nations (UN) broadly defines fishing as “any activity, other than scientific research conducted by a research vessel, that involves the catching, taking, or harvesting of fish” in marine, coastal, and inland areas. Fishery can be industrial, commercial, subsistence, recreational, or artisanal, and can be annual or seasonal.

In South Africa, as defined in the Marine Living Resources Act 18 of 1998 (MLRA), fishing includes searching for, catching, taking, or harvesting fish or an attempt to do any such activity. The definition is extended to include any other activity that can be expected to result in fishing. The MLRA recognises three fisheries categories: commercial, small-scale, and recreational.

This section of South Africa’s Oceans Economy Master Plan presents a sub-sector plan for Fisheries. The sub-sector plan deals with the following:

- A global review of the industry;
- A review of the national industry;
- Current interventions;
- Challenges;
- Opportunities;
- Skills and transformation;
- Research, development and technology;
- Environmental sustainability;
- Policy consideration; and
- Targets and interventions through to 2035.

8.1 Global sub-sector review

Global fisheries and aquaculture production was estimated at 223.2 million tonnes in 2022, with the capture fisheries contributing 92.3 million tonnes, 41% of the total output. The breakdown of the capture fisheries suggests that the marine capture fisheries contributed 81 million tonnes, with 11.3 million tonnes from inland water systems. Whilst the aquaculture sector has surpassed capture fisheries production in recent years, capture fisheries remain an important source of aquatic animal production. The Food and Agriculture Organisation (FAO) estimated 162.5 million tonnes of aquatic animal food consumption in 2022. The global consumption suggested an increase in aquatic foods per capita to 20.6 kg from 9.1kg in 1961. Considering the nutrition and food security presented by aquatic animal foods, fisheries and

aquaculture are an important source of livelihoods. According to the FAO, an estimated 61.8 million people were employed in the primary fisheries and aquaculture sector in 2022, down from 62.8 million in 2020.

8.2 South African sub-sector review

Fisheries is an extremely strategic sector for food security in South Africa. The South African fishing sector is well-established, ranging from a commercial, capital-intensive fishing sector, with a highly industrialised fishing fleet and fish processing facilities, to small-scale and recreational fisheries. These three sectors typically operate in the same space and harvest similar resources. The industry is extremely complex, and there is a great diversity in catching techniques, processing, marketing, capital investment, equipment, and infrastructure. The commercial industry boasts itself of vertical integration in its business strategies. Vertical integration is a business strategy where a company takes ownership of multiple stages in its supply chain. Vertical integration offers several potential benefits, including cost savings, improved control over the supply chain, increased efficiency, and a quality control across the value chain, leading to enhanced market power.

The commercial fishing segment consists of different fishing sectors (or fisheries) with fishing right-holders harvesting a variety of species, from white mussels in the beach sand to deep-sea species like sardines and hake. Annual production is in the region of 600,000 tonnes and generates total sales estimated at ZAR10 billion, representing about 1% of the national Gross Domestic Product (GDP). Although estimates vary, it is believed that the commercial segment directly employs around 28,000 people, with around 30,000 more depending on fisheries resources to meet basic needs in the small-scale and recreational sectors. While the industry makes a relatively small contribution to the national economy, the coastal regions and many coastal communities outside the main urban areas are very dependent on fisheries for their livelihoods.

Small-scale fishers are a recognised group of fishers who fish for a living, using basic equipment and small fishing rowboats. Most fishing is done in coastal waters; however, at times, motorised boats equipped with outboard engines are used to access waters further ashore. Local communities that host these fishers have been fishing for decades, and fishing has become part of their culture, identity, and heritage. Small-scale fishers are allocated fishing rights through established co-operatives in mainly coastal communities. Their produce is destined for local consumption, resulting from a variety of factors, which include limited processing and storage facilities. This catch includes mussels, finfish, octopus, rock lobster, sand and mud prawns, limpets, crabs, oysters, seaweeds, and abalone.

The Small-scale fishers, having been granted fishing rights dating back to 2019, struggled to operate and to utilise the rights granted. The challenge had been the limited access to basic fishing equipment, access to fishing vessels, processing, and storage facilities. Harbours and launch sites infrastructure has deteriorated, rendering it impossible and dangerous to use. Access roads have also contributed to restricting the operations, as most access points are impossible to reach. These challenges have therefore excluded the small-scale fishers from the fishing industry and the right of entry to the fishing economy. Lack of business skills and market access has contributed to the failures of the small-scale fishing sector. The dependence on dwindling fisheries resources and the non-existence of alternative livelihoods has further hammered the small-scale fishing sector.

Statistics South Africa on its Ocean (marine) fisheries and related services industry, 2023 Financial and production statistics embargoed until March 2025, presents the fluctuation of contributions by species and by processed products, which excludes any product from the fish farming sector. The statistical report interrogates the data and devises an analysis that informs the estimates on income, employment, salaries, and sales for the period 2018-2023.



Figure 1. Comparison of 2020 and 2023 financial statistics.

The **total income** in the ocean (marine) fisheries and related services industry in 2023 was R19,9 billion, which is an annualised increase of 7,7% compared with the total income reported in 2020 (R16,0 billion). The number of persons **employed** in the ocean (marine) fisheries and related services industry in 2023 was 16 278. This represents an annualised increase of 2,7% compared with the number of persons employed in 2020 (15 025). The largest number of persons employed in 2023 was male employees (11 457 or 70,4%).

8.3 Current interventions

Interventions in South Africa's fishing industry have focused primarily on supporting small medium and micro enterprises (SMMEs), preparing for the long-term fishing rights allocation process in 2020/2021, and under Operation Phakisa, implementing a marine protection services and governance framework, which includes: (i) developing Marine Protected Areas (MPAs) where biodiversity can flourish and fish stocks can replenish themselves; and (ii) adopting a Marine Spatial Planning (MSP) framework, which analyses the spatial and temporal distribution of human activities in the country's marine areas.

The fishing industry is regulated by the Government using a co-management approach with industry and other stakeholders. This means that all stakeholders, including coastal communities, are empowered to participate with the Government in developing, implementing, and evaluating fishery policies and management plans for South Africa. Because small-scale fisheries are composed of previously disadvantaged individuals, with little or no capital to establish sustainable business operations, they tend to depend on Government support for business start-up. In this regard, the Department of Fisheries, Forestry, and the Environment (DFFE), has over the years been engaged with all spheres of government to ensure that there is sustained support to these emerging enterprises, resulting in the establishment and funding of approximately 2,000 SMMEs across the various sectors to the value of around ZAR1 billion per annum as well as the formal recognition of small-scale fisheries in 2014.

South African fisheries are managed according to two strategies: total allowable catch (TAC) and total allowable effort (TAE). The first strategy refers to the total amount of catch that may be removed from the sea in one season, while the second restricts the amount of effort used to catch fish (such as restricting the number of boats and the number of fishers per boat to catch a particular species). Both TAC and TAE values are crucial to ensure sustainable harvesting of fisheries resources. Each year, fisheries right-holders are permitted to fish and catch within individually prescribed TAC/TAE. These values are determined by fisheries scientists working with the Department of Fisheries, Forestry, and the

Environment (DFFE), and based on their recommendations, as well as the economic and social considerations of that time, the Minister makes the final decision on the TAC and TAE values for the new fishing season.¹⁶⁸

To ensure compliance with fishing regulations in South Africa's Exclusive Economic Zone (EEZ), both commercial and small-scale fishers are subjected to monitoring, control, and surveillance by the DFFE. This is usually an expensive undertaking, as it involves both land and sea-based resources (including three fishing patrol vessels), often in difficult weather conditions. Where possible, non-compliant users are apprehended, charged, prosecuted, and penalised.

8.4 Challenges

While the fishing industry contributes significantly to South Africa's food security, it is not without its challenges. These include:

- The over-exploitation of some marine resources;
- Climate change variability;
- Fishing industry perceived as a 'mature sunset' industry compared to new growth sectors, such as marine tourism, and offshore oil and gas;
- Illegal activity and the poaching of endangered species by organised transnational networks;
- Lack of a business-enabling environment;
- Continued fragmentation of industry impacting on job retention; and
- Tense community dynamics in some regions (small-scale fishing and commercial fishing, small-scale fishing, and urban development in metro fishing harbours).
- Poor infrastructure and underperformance of ports and harbours
- The diminished rail and road infrastructure.

Furthermore, whilst the Government has invested time and funds to establish an organised small-scale fisheries segment, including forming small-scale fisheries cooperatives and granting of fishing rights to such entities, these communities still face several limiting factors, including:

¹⁶⁸ SADSTIA, 2019. *Management*, South African Deep Sea Trawler Industry Association (SADSTIA), available at: <<https://www.sadstia.co.za/fishery/management>>

- Lack of access to resources, including vessels and fishing equipment, forcing fishers to get into third-party fish catching agreements;
- Lack of fishing skills and access to technology, contributing to the failure of utilising fishing rights
- Unviability of the allocated basket of species to be caught;
- Absence of storage and processing facilities for the storage and processing of fish and fish products;
- Poor road infrastructure and costly access fees in some closed or protected areas, which limit operations;
- Inability to directly access markets and determine fish prices, compounded by the lack of process and storage facilities;
- Monopoly and abuse of established commercial enterprises, forcing fishers to get into catching agreements and joint ventures with these enterprises, thereby limiting financial returns;
- Lack of knowledge and training on general business skills among local communities and businesses;
- Impact of offshore oil and gas operations and related activities, including underwater pipelines, that potentially threaten resource availability and increase environmental risks (such as oil spillage);
- Delays in Government interventions and proposed support programmes, including the Small-Scale Fisheries Implementation Plan; and
- Marine Spatial Planning that often excludes and undermines fisher communities.

8.5 Opportunities

Although the industry faces several key challenges, particularly for small-scale fishers, the following opportunities have been identified that should be appropriately addressed:

- Joint venture partnerships.
- Recapitalisation of South Africa's fishing fleet;
- Direct equity investment or buy-out options with identified partners; and
- Using Cape Town as a gateway for expansion into African fish markets;

8.6 Skills and transformation

The South African fishing industry has undergone massive structural change since 1994 and is considerably ahead of other sub-sectors of the oceans economy, especially in terms of participation by historically disadvantaged individuals (HDIs). In 2004, the DFFE estimated that at least 60% of commercial fishing rights were allocated to HDIs or majority HDI-owned companies. An independent

study conducted in 2016 revealed that the deep-sea trawling industry (by far the country's most valuable fishery segment) is 62.36% black owned and was a level three contributor to broad-based black economic empowerment (B-BBEE). Currently, the fishing industry transformation profile entails approximately 75% black-ownership (up from 35% in 2004). In the deep-sea hake segment, HDIs hold around 67% of the shares in firms which harvest 92% of the deep-sea hake trawl catch.

8.7 Research, development, and technology

Since 1998, South Africa has had an established scientific observer programme dedicated to pelagic fish that are found near the ocean surface or in middle depths, such as sea turtles, swordfish, and sharks. The observer programme collects data to inform management strategies in South African waters, including to mitigate and manage bycatch of fish and other animals, especially dolphins, sharks, turtles, and seabirds.

Likewise, a dedicated scientific observer programme has been active in the hake fisheries segment since 2002. The programme, conducted in partnership with the DFFE and the South African Deep Sea Trawler Industry Association (SADSTIA), enables fisheries scientists to collect accurate information about fishing activity and the status of offshore fish stocks, particularly hake. Information gathered by the scientific observer programme is used to guide scientific and management decision-making, including determining TAC and TAE values, as discussed above.

South Africa also hosts a range of non-governmental organisations (NGOs) that conduct research on several ocean species, including the Mammal Research Institute (MRI) Whale Unit, established in 1985 to study the ecology, population dynamics and behaviour of diverse cetaceans' populations (i.e. whales, dolphins, and porpoises) in southern African waters, with the principal objective of promoting marine conservation in South Africa and beyond.

To ensure informed decision-making, the Government has also focused on increasing research outputs and access to various technologies relating to transformation, skills development, and capacity building within the fisheries industry. This has resulted in the DFFE being able to develop scientifically based methodologies aimed at restructuring the industry in a meaningful and efficient manner. This has helped to change the industry within a brief time, from one dominated by a handful of white-owned conglomerates in the early 1990s to one 75% Black-owned and a level three contributor to B-BBEE from around 2016.

8.8 Environmental sustainability

There are various threats to fish populations that potentially make harvesting them from the ocean unsustainable, including overfishing (i.e. the removal of fish species at a rate greater than that it can replenish itself naturally) and bycatch (i.e. discarding unwanted fish from either trawling, line, or net fishing). The management agency responsible for overseeing South Africa's fisheries and optimal utilisation of fisheries resources is the Fisheries Management Branch within the DFFE. The Branch has various sub-programmes, among these:

- Fisheries Research and Development, which ensures the promotion of the sustainable development of fisheries resources and ecosystems by conducting and supporting appropriate research;
- Marine Resource Management, which oversees the sustainable utilisation and equitable and orderly access to marine living resources through improved management and regulation;
- Monitoring, Control and Surveillance, which overlooks the protection and promotion of sustainable use of marine living resources by intensifying enforcement and compliance; and
- Fisheries Operations Support, which provides support services to ensure the effective and efficient management and administration of inter alia the Marine Living Resources Fund (MLRF).

South Africa has managed to deliver sustained benefits throughout the fishing industry supply chain, benefiting coastal communities and contributing to food security and socio-economic development and, at the same time, maintaining a healthy fish stock. On a more positive note, the South African hake trawl fishery was the first hake fishery in the world to be certified by the Marine Stewardship Council (MSC), an international non-profit organisation which sets a standard for sustainable fishing. This certification has been retained since 2004, placing the South African hake trawl fishery amongst the best-managed fisheries in the world, while also delivering tangible socio-economic benefits to the people of South Africa.

Even so, several challenges exist and impede South Africa's ability to oversee the protection of its ocean habitats. A recent study found that, while significant progress has been made towards sustainable fishing, the DFFE's Fisheries Management Branch has struggled to carry out its mandate, primarily due to limited capacity and skills in the climate change field, ineffective implementation of various policies dealing with the environment and climate change, and an implementation gap between science and management. The study further proposes that more attention has been paid to other sectors of the South African economy, particularly energy, with limited reference to climate change in Fisheries Management documents and equally limited reference to fisheries in national policies and legislation on climate

change, such as the 2019 National Climate Change Adaptation Strategy (NCCAS) and the 2022 Climate Change Bill. The implication of this, according to the study, is that insufficient priority has been given to climate change adaptation measures in the industry, with potential impacts to local fishing communities, most vulnerable to the current and future impacts of climate change.

8.9 Policy considerations

The South African fishing industry is an established sector with a long history of differing access user rights (fishing rights, exemptions, permits and licensing). Historically, access to fishing resources favoured white-owned commercial enterprises. After 1994, the Government made significant strides in addressing inequality in user access rights by passing the Marine Living Resources Act 18 of 1998 (the MLRA), which is still the primary legislation addressing South Africa's fishing industry. The MLRA includes provisions that regulate the use and management of marine living resources and ecosystems to achieve economic growth, human resource development, capacity building and transformation within fisheries. Fishing rights are allocated in terms of section 18 of the MLRA.

An important topic of debate in the allocation of long-term commercial fishing rights under the MLRA and fully transforming the industry has centred on concerns around the exclusion of some fishing communities from previous allocations in favour of commercial and recreational fishers. In its original iteration, the MLRA effectively excluded many small-scale fishers from access to resources, particularly artisanal/subsistence fishers who catch and sell to sustain their livelihoods. This omission led to the development of the Small-Scale Fisheries Policy (SSFP) in June 2012, which was intended to fundamentally change Government's approach to small-scale fisheries by giving small-scale fisheries the opportunity to have equal access to the country's marine resources as commercial fishing companies. Previously, only a co-operative was deemed to be a suitable legal entity for the allocation of small-scale fishing rights. The SSFP was soon followed by the Small-Scale Fisheries Implementation Plan (SSFIP) in 2013, which provided a high-level view of the process together with a 5-year timeframe for the implementation of the SSFP – the latter considering the complexity of the process, costs, and capacity of Government to implement. Then, in May 2014, the Marine Living Resources Amendment Act, Act no. 5 of 2014, was passed, which included changes to some definitions in the MLRA, as well as expansion of the objectives and principles to incorporate the objectives of the SSFP.

While the amended MLRA recognised the rights of small-scale fishing, the revised definitions did not formally recognise artisanal/subsistence fishers under this group, with potential unintended

consequences for these communities, including fishing with recreational permits or fishing illegally (for food), and being unable to sell catch for income. There have also been implications for workers who are directly involved in pre- and post-harvesting and those, particularly women, who are not directly involved in harvesting, but may be involved in bait preparation, cleaning, processing, and marketing of the catch. Furthermore, unlike commercial and recreational fishers, permit conditions under the amended MLRA exclude small-scale fishers from participating in the harvesting of line fish over weekends and public holidays.

To address these and other regulatory issues and assist rural fishing communities, the DFFE intends to develop more inclusive policies aimed at redefining access rights and empowering rural communities to participate more equitably and sustainably in South Africa's fishing industry. In this regard, comprehensive legislative reform is expected to be introduced by DFFE with the intention to amend the MLRA in its entirety. Once passed, the Department will be better positioned to review the Act's definitions, including re-defining small-scale fishers to include subsistence-based fishers, and establish a new fishing governance framework that will increase the number of rights holders in the industry and focus on attracting additional investment in a segment that has been traditionally characterized by low production, inadequate investment, and socio-economic marginalisation.

For the time being, nine (9) commercial fishing sectors that were previously allocated long-term commercial fishing rights in 2005 and 2013 are due for reallocation as part of the 2020/2021 Fishing Rights Allocation Process ('FRAP2021'), in terms of section 18 of the MLRA. The government views the allocation of longer-term fishing rights through the FRAP2021 as a constitutional and legislative imperative that seeks to stabilise and transform the industry and attract more investment. In this regard, the DFFE recently reviewed all its various policies and fees for applications, licences and permits and subsequently embarked on an extensive public consultation process on the proposed policies and amended fees for FRAP2021. The purpose of the consultations was to allow debate and discussion on the more controversial aspects of a rights allocation process, including the criteria used to determine transformation targets, fronting, and determination of economically viable allocations. For the first time in an allocation process, the DFFE also conducted Socio-Economic Impact Assessments (SEIAS) to promote profitability, whilst optimising transformation and job creation. In February 2022, the DFFE announced that it had concluded the rights allocation process and published the General Publish Reasons (GPRs) on the allocations, noting that it had received a total of 2 473 applications.

8.10 Targets and Interventions through to 2035

Tabled below is the Fisheries Sub-Sector Plan relating to South Africa's Oceans Economy. The scope of the plan spans three strategic thrusts through to 2035 that collectively aim to realise the abovementioned economic growth targets. The first thrust (0-2 years) will arrest declining growth and bring about short-term stability to the sub-sector by creating a stable, enabling legislative and regulatory environment, which will be supported by accessible, effective, and efficient administrative and authorisation processes. To guide future growth and development of the sub-sector, a research and monitoring base will be established, which will support decision-making, planning, implementation, compliance, surveillance, and enforcement interventions. The research and monitoring baseline will inform the drafting of a sector-specific Transformation Charter, which will be customised to reflect the unique operational and transformation challenges and requirements within the industry. The Transformation Charter, in turn, will be closely aligned to a range of initiatives that will aim at increasing skills and capacity within the fishing industry, with a specific focus on historically disadvantaged individuals and marginalised groups, small-scale subsistence-based fisheries, and production facilities.

With the sub-sector stabilised, the second strategic thrust (2-5 years) will focus on reviving the industry through the introduction of accelerated SMME development interventions, supported by the allocation and authorisation of alternative resource uses, to diversify the product offering of the sector. The interventions to stabilise, revive and grow the fisheries sub-sector to 2035 are detailed below.

Oceans Economy Master Plan Working Group 4

Fisheries 01/07/2026 Master

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
Legislation, policy, and fishing Rights (GDP Contribution)	Creating an enabling legislative framework and non-restrictive regulations that support the economic viability of the fishing sector.		X		Increased and continued GDP contribution/ by the fishing sector	Lead DFFE Support Fisheries Stakeholder, DTIC
Legislation, policy, and fishing Rights (review and integration)	Review and amend the supportive legislative framework and regulations to support the integrated economic growth of the fishing sector.		X		Integrated, harmonised and optimised use of the ocean space where varying & relevant legislation complement each other for a profitable and sustainable ocean economy growth.	Lead DFFE Support Fisheries Stakeholder, DTIC
Administration and authorisations (online system(s))	Establishment of easily accessible administrative and authorisation processes which include the use of online information technology systems	X			User-friendly and flexibly operational online administrative and authorisation systems established and sustained.	Lead DFFE Support Industry, Communities, DTIC, Independent advisors

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
	and applications including cell phone-based applications.					
Administration and authorisations (service delivery)	Decentralise services for easy access by stakeholder parties for applications, permissions, and authorisations in place for regulating the fishing sector.	X			Improved service delivery and turnaround times that sustain the sector's economic value and ease the burden of business operations.	Lead DFFE Support Industry, Communities, Independent advisors
Government intervention programmes (integration of ocean user activities and operations)	Harmonised government programmes that promote limited user confusion and ensure maximum economic returns from the ocean space (Oceans Economy Master Plan (OEMP), Marine Spatial Planning (MSP))		X		Implemented OEMP and MSP that directly contribute to the economic growth of the fisheries sector.	Lead DFFE Support Industry, Communities, Government Departmental Sectors, Independent advisors
Resource management (Research)	Formation of a research and monitoring baseline, including increased prioritised funding for research,	X			Fisheries research and monitoring baseline established with endorsed research	Lead DFFE Support Industry, Communities, Government Departmental

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
	incorporating a set five-year baseline review.				outputs for the fishing sector.	Sectors., Independent advisors
Resource management (Fisheries research, resource mapping)	An oceanographic research programme to monitor and track changes in major ecosystems, established and be financially capacitated for acquiring qualified researchers and modern research platforms, instrumentation, and tools.	X			Improved and firm research findings and research to policy advice available and applied accordingly in the management of the fishing sector	Lead DFFE Support Industry, Communities, Government Departmental Sectors., Independent advisors
Resource management (alternate fisheries resources use)	Allocation and authorisation of alternative resource use (e.g. fishmeal usage of mesopelagics (lantern & lightfish) and round herring catches and landings).		X		Reduced fishing pressure on critical fisheries resources and increased returns from non-human consumption species.	Lead DFFE Support Industry, Communities, Independent advisors
Resource management	Venture into new, experimental, and	X			Increased new, experimental, and	Lead DFFE

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
(New fisheries resources)	exploratory fisheries that uncover potential for extended new fisheries entering the fishing sector.				exploratory fisheries entering mainstream resource harvesting and markets.	Support Industry, Communities, Independent advisors
Access to fisheries resources. (vessels & equipment)	Provide support in respect of vessel access and fishing equipment for SMMEs and small-scale fisheries right holder cooperatives.	X			Access to resources sustained with user access and tools in place, through the provisioning of vessels and fishing equipment for SMMEs and small-scale fisheries.	Lead DFFE Support Industry SMMEs Fisheries cooperatives, DTIC, Independent advisors
Access to fisheries resources. (vessel recapitalisation)	Basic analysis of the current fishing fleet and exploration of opportunities for the small-scale fisheries on a cost-shared scheme intervention of the dtic .	X			Fishing vessel recapitalisation revived and committed, anchored cost-sharing schemes maintained, especially for small-scale evolving fisheries cooperatives.	Lead DFFE Support Industry, Communities, DTIC, Independent advisors
Access to fisheries resources.	Engage the dtic on the grant schemes and other alternative	X			Facilitated access to the dtic cost-sharing grant	Lead DFFE

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
(grants or subsidies)	donor funds that can be accessed to support the SMMEs and Small-scale Fisheries Cooperatives.				schemes and financial incentives for the local SMMEs and small-scale fisheries cooperatives.	Support Industry, Communities, DTICs, Independent advisors
Resource management (Monitoring, Control, and Surveillance)	Advanced compliance, monitoring, surveillance, and enforcement by employing remote and remotely controlled equipment and appliances.	X			Increased coverage of surveillance and monitoring within and around the South African Exclusive Economic Zone, incorporating advances in technology for compliance monitoring and surveillance.	Lead DFFE Support State Security Agency DoD (SA Navy) Industry, Communities, Independent advisors
Resource management (Monitoring, Control, and Surveillance)	Encourage core management of resources and increased joint international, regional, national, and localised law enforcement operations.	X			Reduced acts of Illegal Unreported and Unregulated (IUU) fishing activities in the high seas, territorial and coastal waters.	Lead DFFE Support State Security Agency DoD (SA Navy) Industry, Communities, Independent advisors

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
Infrastructure and assets (Shipping Ports, Harbours, and boat launch sites)	Prioritise the built, repair, and maintenance of fishing harbours, boat launch sites, and port infrastructure; these are to be established and continued to be maintained as necessary and required.	X			Increased access and use of fishing harbours, boat launch sites, and port infrastructure by SMMEs and small-scale fisheries.	Lead DOT, DPWI & DFFE Support Industry, DSBD, the DTIC, TNPA
Infrastructure and assets (Launch sites access fees)	Negotiate access fees in privately controlled and privately owned properties and privately operated fishing access points.	X			Sustainable and reasonable negotiated access fees computed and applied, including fee exemptions for SMMEs and small-scale fisheries.	Lead DFFE Support Industry, DSBD, the DTIC, Fisheries, cooperatives, DPWI, DALRRD
Infrastructure and assets (Storage and processing Facilities)	Establish storage facilities and fish processing infrastructure that responds to value adding and secured maximum market product value.	X			Built fish processing establishments for fish cleaning, packaging, and storage for small-scale fisheries.	Lead DFFE Support Industry, DSBD, the DTIC, Fisheries cooperatives, DPWI, DALRRD

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
Infrastructure and assets (access roads and rail links to markets)	Prioritise and invest in construction and maintenance of access roads, rail links to and from harbours, boat launch sites, and ports, business centres and markets; these are to be established and continued to be maintained as necessary and required.		X		Established and upgraded road and rail infrastructure for increased ease of access to and from fish landings sites and fish processing establishments linking to business centres and markets.	Lead DFFE Support Industry, DSBD, the DTIC, Fisheries, cooperatives, DPWI, DALRRD
Direct market access (supply and value chain)	Secure sustainable market avenues and product supply, prioritising access and supply of fish products to learning institutions, correctional centres, and health care establishments. This ensures full participation in the value chain and secures monetary	X			Increased revenue returns resulting from expanded small-scale fisheries supplies directly to the end user.	Lead DFFE Support Fisheries cooperatives, DTIC

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
	returns with an effort to eliminate the third-party (on-site fish buyers).					
Direct market access. (market shares)	Secure funding capital and market share access for the SMMEs and small-scale fisheries cooperatives.		X		Increased market shares of SMMEs and small-scale fisheries, leading to increased financial sustainability and viability of SMMEs and small-scale fisheries.	Lead DFFE Support Industry, DSBD, the DTIC, Fisheries cooperatives, DPWI, DALRRD
Conflicts with other sub-sectors of the ocean economy, (Marine Spatial Planning)	Drive a platform for negotiations, integration, and understanding of different values, and the coexistence of different sub-sectors operating in the ocean space.		X		Ocean space users operating in harmony in the same space for sustainable maximised ocean use benefits and revenues, anchored by the implementation of the MSP process.	Lead DFFE Support Industry, Fisheries cooperatives
Conflicts with other sub-sectors of the ocean economy,	Develop and implement an effective fishing grounds protection	X			Fishing grounds protection strategy implemented to ensure the	Lead DFFE

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
(secure fishing grounds)	strategy that integrates Marine Protected Areas (MPAs), observable satellite monitoring, sustainable fishing gear regulations, and active community co-management to ensure the recovery of depleted fish stocks and healthy ecosystem preservation.				sustainable economic viability of the fishing sector, with guaranteed continuation of food and job security.	Industry, Fisheries cooperatives
Transformation, (skills retention and skills investment).	Invest in skills recognition, retention, improvement, and rewards	X			Abled and capacitated employment supply within the fishing industry increased and sustained	Lead Industry Support SAIMI, TETA, SAMSA, DFFE
Transformation, (skills development, capacity building, and sustainable jobs).	Support skills development initiatives and advise on priority areas of training and the type of training required (short courses/qualifications)	X			Increased number of training initiatives provided for scarce skills, which include Skippers, engineers, and other industry technical skills, to support sustainable	Lead Industry Support SAIMI, TETA, SAMSA, DFFE

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
					jobs in the fishing industry.	
Transformation, (skills development, capacity building, and sustainable jobs).	Advancing training in fisheries research and fisheries management scarce skills.		X		Advanced training is offered for fisheries stock assessment, fisheries resource management, and specific academic skills in fisheries	Lead DFFE Support Industry, SAIMI, TETA, SAMSA, DFFE
Transformation: Broad-Based Black Economic Empowerment (BBBEE)	Develop a sector-specific transformation charter for the South African fishing industry to address the unique transformation determination of the fishing sector.			X	Fishing industry transformation charter in place and applied.	Lead: Industry Support: DFFE, DTIC & Labour
Climate change and climate change impacts. (data and literature)	Compilation of an information database and literature survey of potential climate change impacts on marine fisheries as a resource for scientists and managers	X			Accessible data and information needed to predict the climate change impact on the fisheries resources.	Lead DFFE Industry, Communities, Government Departmental Sectors., Independent advisors

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
Climate change and climate change impacts. (response plan for the fishing sector)	Analyse data and information, including literature review, important for the development of a climate change response plan for the fishing sector.		X		Developed climate change response plan for the fishing sector.	Lead DFFE Support Industry, Communities, Government Departmental Sectors., Independent advisors
Climate change and climate change impacts. (Establishment of a multi-disciplinary and multi-institutional research programme)	Establishment of a multi-disciplinary and multi-institutional research programme to improve understanding of climate change impacts on South Africa's marine ecosystems and resources should be urgently initiated, with the aim of developing mitigation and adaptation solutions		X		A strong multi-disciplinary and multi-institutional research programme to improve understanding of climate change impacts on South Africa's marine ecosystems and resources established.	Lead DFFE Support Industry, Communities, Government Departmental Sectors., Independent advisors
Access to water and electricity supply.	Stabilise and incentivise the private sector to address water security issues to lessen the burden on the state	X			Improved water supply for the fishing and supporting industries.	Lead DFFE Support

Focus Area	Intervention	Implementation Time Frame (years)			Target	Institutions
		1-2	3-5	5+		
					Prioritisation of electric supply to businesses to ensure uninterrupted production.	DEE, DWS, Industry stakeholder, Local governments

SUB-SECTOR PLAN

OFFSHORE OIL & GAS



9. Offshore Oil and Gas Sub-Sector Plan

Offshore oil and gas production refers to the exploration and extraction of crude oil and natural gas undertaken from beneath the seabed. This section of South Africa's Oceans Economy Master Plan presents a sub-sector plan for the offshore oil and gas industry. The plan deals with the following:

- A global review of the industry;
- A review of the domestic industry;
- Current interventions;
- Challenges;
- Opportunities;
- Skills and transformation;
- Research, development and technology;
- Energy security and environmental sustainability;
- Policy considerations; and
- Targets and interventions through to 2045.

9.1 Global sub-sector review

The exploration and production of offshore oil and gas have transitioned from a specialized activity into a mature global industrial activity. This shift was necessitated by the depletion of conventional onshore reserves and enabled by radical technological advances in deepwater extraction. Modern operations have expanded from shallow coastal shelves into ultra-deepwater territories, providing a substantial portion of the world's hydrocarbon energy (Mazzini and Etiope, 2017).¹⁶⁹ Advancements in high-resolution seismic imaging, subsea production systems and floating production infrastructure have been fundamental in accessing these complex marine environments (Energy Institute, 2025; IEA, 2025a).^{170,171}

Today offshore drilling occurs across a vast array of marine settings. Shallow-water production at depths below 305 m and midwater production from 305 to 1,524 m (1,000 to 5,000 ft) remain prolific in provinces including the Gulf of Mexico, the Northern North Atlantic, East and West Africa, South America, India,

¹⁶⁹ Mazzini, A and Etiope, G (2017). 'Mud volcanoes: Geologic signals and offshore hazards', *Reviews of Geophysics*, 55(4), pp. 1020-1090.

¹⁷⁰ Energy Institute (2025). *Statistical Review of World Energy 2025 (74th Edition)*. London: Energy Institute (EI).

¹⁷¹ IEA (2025a). *World Energy Outlook 2025: In a volatile world, energy security takes centre stage*. Paris: International Energy Agency (IEA).

Southeast Asia and Australia (ECP, 2025).¹⁷² Over the past two decades the industry has moved further into deeper environments. Deepwater is typically defined as operations between 1,524 and 2,286 m, while ultra-deepwater environments exceed 2,286 m. Current technological limits now approach 3,658 m (12,000 ft), as evidenced by the world record for water-depth drilling of 3,628 m achieved by the Ondjaba-1 well offshore Angola (Sorkhabi, 2025).¹⁷³

Despite the growth in renewable energy, accounting for 14.6 percent, **oil and natural gas remain central to the global energy system.** Fossil fuels accounted for approximately 82 to 87 percent of global primary energy consumption in 2023-2024, where oil contributed 33 percent, natural gas 25 percent and coal 27 percent (Energy Institute, 2025).¹⁷⁴ This dominance is reflected in the current investment landscape where total global energy investment was projected to reach a record USD 3.3 trillion in 2025 (IEA, 2025a).¹⁷⁵ While clean energy receives USD 2.2 trillion of this total, approximately USD 1.1 trillion continues to be directed toward fossil fuels (IEA, 2025b).¹⁷⁶

Global oil demand exceeded 103 million barrels per day (Mb/d) in 2025, reflecting growth in emerging economies across Asia, Africa and Latin America (IEA, 2025c).¹⁷⁷ Long-term projections suggest demand may peak in the mid-2030s at approximately 110 to 112 Mb/d driven by the petrochemical, aviation and heavy transport sectors (Vitol, 2026).¹⁷⁸ Global oil production reached 104.9 Mb/d in 2025 with offshore production accounting for approximately one third of that total at 38.8 Mb/d (IEA, 2025c; IEA, 2025d).^{9,179}

Natural gas remains a critical transition fuel, accounting for 29% of energy-demand growth over the last decade and 25 percent of primary consumption in 2024 (IEA, 2025c).⁹ Energy security has returned to the forefront of policy as global demand rose by 2.2 percent in 2024. This was driven by a 4.3 percent surge in electricity consumption linked to industrial electrification and digital infrastructure such as data centres (IEA, 2025c).⁹

¹⁷² ECP (2025). *Africa Energy Series: Geopolitics and Upstream Investment Trends 2025-2026*. Cape Town: Energy Capital & Power (ECP).

¹⁷³ Sorkhabi, R (2025). 'The deepest and longest wells ever drilled', *AAPG Explorer*, 1 April. [online] Available at: aapg.org (Accessed: 10 March 2026).

¹⁷⁴ Energy Institute (EI) (2025). *Statistical Review of World Energy 2025 (74th Edition)*. London: EI.

¹⁷⁵ *International Energy Agency (IEA) (2025a) World Energy Outlook 2025: In a volatile world, energy security takes centre stage*. Paris: IEA.

¹⁷⁶ IEA (2025b). *World Energy Investment 2025*. Paris: IEA

¹⁷⁷ IEA (2025c). *Global Energy Review 2025*. Paris: IEA.

¹⁷⁸ Vitol (2026). *Long-Term Energy Outlook*. Geneva: Vitol Group.

¹⁷⁹ IEA (2025d). *Oil Market Report - December 2025*. [online] Available at: [iea.org](https://www.iea.org) (Accessed: 12 March 2026).

Technological innovation, particularly in specialized floating drilling units like drillships and semi-submersibles, has enabled discoveries in high-potential frontier basins (Westwood Global Energy, 2025a).¹⁸⁰

- **Namibia:** In the Orange Basin, wells such as Venus-1X and Graff-1 are located in water depths between 1,200 m and 3,000 m (Impact Oil and Gas, 2022).¹⁸¹ Discoveries since 2022 suggest in-place resources exceeding 20 billion barrels of oil equivalent (boe), with production expected by year-end 2029 (The Oregon Group, 2025; Africa Oil and Gas Report, 2026).^{182,183}
- **Guyana:** The Stabroek Block represents one of the largest offshore finds in decades, with over 11 billion boe recoverable. Following its 2015 discovery, Guyana reached first oil in 2019 and is projected to produce 900,000 barrels per day (bpd) by late 2025 (ExxonMobil, 2024).¹⁸⁴ To manage this, Guyana enacted the Natural Resource Fund Act 2021 and the Local Content Act 2021, becoming the wealthiest South American nation per capita (Official Gazette, 2021; Parliament of Guyana, 2026; WorldAtlas, 2025).^{185,186,187}
- **Angola and Mozambique:** Angola holds proven crude reserves exceeding 7 billion barrels (ITA, 2025)¹⁸⁸ while Mozambique possesses offshore gas reserves of approximately 180 trillion cubic feet (Tcf) with over 100 Tcf recoverable (ITA, 2024).¹⁸⁹

While Brazil and Norway lead in ultra-deepwater and safety standards respectively, the most dynamic exploration zones are now found within the frontier basins of Africa and South America (IEA, 2025a).¹⁹⁰

¹⁸⁰ Westwood Global Energy (2025a). Weekly Global Offshore Rig Counts 2025. [online] Available at: westwoodenergy.com

¹⁸¹ Impact Oil and Gas (2022). *Deepwater Exploration in the Orange Basin: Venus and Graff Discoveries*.

¹⁸² The Oregon Group (2025). *Namibia: Africa's new oil frontier*. [online] Available at: theoregongroup.com (Accessed: 16 March 2026).

¹⁸³ Africa Oil and Gas Report (2026). *Namibia's Orange Basin: The 20-billion-barrel frontier*.

¹⁸⁴ IEA (2025a). *World Energy Outlook 2025: In a volatile world, energy security takes centre stage*. Paris: International Energy Agency (IEA).

¹⁸⁵ Official Gazette (2021). *Extraordinary Gazettes - 30th December 2021 - Act No. 19 of 2021 – Natural Resource Fund Act 2021*. Georgetown: Government of Guyana.

¹⁸⁶ Parliament of Guyana (2026). *Local Content Act 2021 - No. 18 of 2021*. Georgetown: Parliament of Guyana.

¹⁸⁷ WorldAtlas (2025). *South American countries ranked by GDP per capita in 2025*. [online] Available at: worldatlas.com (Accessed: 12 March 2026).

¹⁸⁸ ITA (2025). *Update on the Oil and Gas Market in Angola*. [online] Available at: trade.gov (Accessed: 16 March 2026) U.S. International Trade Administration (ITA).

¹⁸⁹ ITA (2024). *Mozambique - Oil and Gas*. [online] Available at: trade.gov (Accessed: 17 March 2026) U.S. International Trade Administration (ITA).

¹⁹⁰ IEA (2025a). *World Energy Outlook 2025: In a volatile world, energy security takes centre stage*. Paris: International Energy Agency (IEA).

The offshore petroleum sector is defined by a strategic intersection of international oil companies (IOCs), national oil companies (NOCs) and specialised service providers. Dominant IOCs include ExxonMobil, Chevron, BP, TotalEnergies, Shell, Eni and ConocoPhillips, while NOCs such as Saudi Aramco, Petrobras and the China National Offshore Oil Corporation (CNOOC) serve as pivotal regional and global anchors.

By early 2025 the global offshore rig fleet comprised approximately 376 jack-up rigs and 134 floating rigs. These floating units currently dominate high-stakes exploration in the Gulf of Mexico, offshore Brazil and across the West African margin (Westwood Global Energy, 2025b).¹⁹¹

A notable geographic shift in exploration activity toward the Global South – specifically Latin America, Africa and India – is projected to account for the majority of high-impact exploration in 2026. While global well counts averaged 470 in 2024, they declined through 2025 with annual projections falling below 400 wells by 2026 (Westwood Global Energy, 2025a; IEA, 2025a).^{192,16}

This consolidation of activity coincides with heightened geopolitical volatility. Intermittent disruptions to the Strait of Hormuz during early 2026 caused global oil prices to briefly exceed US\$115 per barrel in March 2026. These tensions have established a structural "risk-discount" advantage for African crude and LNG exports (ECP, 2025).¹⁹³ Nigeria, Angola and Equatorial Guinea are uniquely positioned to leverage this shift to capture incremental demand through their established infrastructure and maturing policy frameworks. This environment underscores the necessity of investment readiness as high price signals continue to drive upstream licensing and reinforce long-term energy security across the continent (ECP, 2025).²⁵

The global energy system is navigating a complex transition toward low-carbon sources, yet oil and gas remain fundamental to meeting aggregate demand. Electricity demand is forecasted to increase by 40 to 50 percent by 2045, a trend accelerated by the expansion of electric vehicles, AI-driven data centres and industrial electrification (IEA, 2025a).¹⁹⁴

¹⁹¹ Westwood Global Energy (2025b). *Global Offshore Rig Market Report*. London: WGE.

¹⁹² Westwood Global Energy (2025a). *Weekly Global Offshore Rig Counts 2025*. [online] Available at: westwoodenergy.com.

¹⁹³ ECP (2025). *Africa Energy Series: Geopolitics and Upstream Investment Trends 2025-2026*. Cape Town: Energy Capital & Power (ECP).

¹⁹⁴ IEA (2025a). *World Energy Outlook 2025: In a volatile world, energy security takes centre stage*. Paris: International Energy Agency (IEA).

While solar photovoltaics (PV) and offshore wind represent the fastest-growing sectors, offshore hydrocarbon production remains a critical pillar of energy stability. To satisfy projected global requirements through 2045 the offshore sector alone must deliver approximately 23 Mb/d of new production capacity (IEA, 2025a).²⁶ Consequently, offshore petroleum development continues to be a vital component of global energy security during the transition toward a lower-carbon future.

9.2 South African sub-sector review

South Africa's energy supply remains heavily reliant on coal in 2025 (Table 1). Although its share in the electricity mix is declining, coal still constitutes over 75% of primary energy consumption. Despite the challenge of aging infrastructure, coal continues to be the primary source for electricity production. Conversely, crude oil or diesel is predominantly utilized to fuel Open Cycle Gas Turbines (OCGT) during periods of peak demand (DMRE, 2024).¹⁹⁵ Data from early 2025 indicates that coal accounted for 74% of generation, while renewables, comprising solar, wind and Independent Power Producers (IPPs), contributed 17%. Nuclear energy provided 3-4% and natural gas represented 5-6% (DFFE, 2025).¹⁹⁶ Notably, a 5.7% year-on-year growth in generation during early 2025 improved grid stability and supported higher consumption levels.

Table 1: South African Energy Source Profile (2024/2025)

Energy Source (2024/2025)	Electricity Generation (% of Mix)	Total Primary Energy Consumption (% of Mix)
Coal	~74-82%	~70-77%
Crude Oil/Petroleum	~3-6% (primarily diesel)	~20-26% (transport/industry)
Nuclear	~3-5%	~2-5%
Natural Gas	~1-3%	~3-5%
Renewables	~13-17% (Wind/Solar/Hydro)	<5% (excluding biomass)

South Africa's offshore industry (Figure 15) is in a nascent stage with significant uncertainty regarding the commercial recoverability of reserves. The sector competes globally against established producers

¹⁹⁵ DMRE (2024). The South African Energy Sector Report 2023. Department of Mineral Resources and Energy <https://www.dmre.gov.za/Portals/0/Resources/Publications/Reports/Energy%20Sector%20Reports/SA%20Energy%20Sector%20Report/2023-South-African-Energy-Sector-Report.pdf>.

¹⁹⁶ DFFE (2025). Minister Dion George welcomes decline in coal share and growth in renewables in South Africa's electricity mix.: 2 April 2025. Department of Forestry, Fisheries and the Environment https://www.dffe.gov.za/mediarelease/george_welcomeingdeclineincoashare

with lower operating costs. Exploration dates back to the 1960s, with current resources concentrated in four major basins: the onshore Karoo Basin and the offshore Orange, Outeniqua and Durban-Zululand Basins (Petroleum Agency SA, 2025).¹⁹⁷

Recent geological studies have revised the potential resource base upward, with estimated oil resources increasing to 34 billion barrels and offshore gas estimates reaching approximately 60 Tcf (Petroleum Agency SA, 2026).¹⁹⁸ With a modest recovery factor of 40%, these prospective resources if turned into discovered resources through successful exploration efforts, could meet South Africa's liquid fuel consumption for up to 80 years. This is based on the 600 000 barrels per day liquid fuel consumption of South Africa. This signifies the immense potential South Africa has in terms of indigenous oil and gas resources that can have an impact on its energy security. The recent discoveries in adjacent countries particularly in Namibia could serve as a motivation for South Africa to pursue the exploration of its prospective oil and gas resources.

- **Outeniqua Basin:** PetroSA has operated the gas fields in **Block 9**, offshore Mossel Bay since 1992, supporting the world's fifth-largest Gas-to-Liquids (GTL) facility, historically supplying up to 3% of national liquid-fuel requirements (DMRE, 2025).¹⁹⁹ In terms of gas supply, South Africa faces supply shortages in the upcoming years due to the decline in Sasol's gas supply from Mozambique's Pande-Temane gas field^s projected from 2026 onwards, however, severe shortages are projected to start from 2028. Measures by the South African government together with industry stakeholders are underway to address this challenge.

¹⁹⁷ Petroleum Agency SA (PASA) (2025). *Petroleum Exploration Opportunities Brochure (2025)*. Bellville.

¹⁹⁸ PASA (2026). *Revised Estimates of Hydrocarbon Potential in South African Offshore Basins*. Bellville.

¹⁹⁹ DMRE (2025). *PetroSA and the Future of the Mossel Bay GTL Refinery*. Pretoria: Department of Mineral Resources and Energy.

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- ²⁰⁰ A better-quality map can be accessed at: <https://www.petroleumagencysa.com/index.php/maps>.

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- **Orange Basin:** Following the breakthrough 2022 discoveries of Venus and Graff fields, Namibia's offshore sector has seen over ten additional oil and gas finds. Capitalising on this momentum, South Africa has mapped the "Shark Alley Fairway" within its own waters, a region estimated to hold prospective resources exceeding 6 billion boe (Petroleum Agency SA, 2025).^{30, 202}
- **Mozambique:** With roughly 180 Tcf in the Rovuma Basin, Mozambique is projected to become a top ten global LNG producer by 2040 (IEA, 2025a).²⁰³

Addressing the current electricity shortfall, estimated at 4,000 MW, requires integrating these upstream successes into the broader energy transition. This process entails repurposing existing geological expertise for low-carbon applications, including offshore wind energy (OWE), Carbon Capture, Utilisation and Storage (CCUS) and green hydrogen to support a Just Energy Transition by 2050 (Republic of South Africa, 2022).^{204, 205}

While traditional exploration remains focused on significant oil and gas finds within the Orange and Outeniqua Basins, this infrastructure is increasingly aligned with cleaner energy goals. However, the development of these upstream petroleum capabilities on the continental shelf is tempered by three primary categories of challenges.^{206, 207}

1. **Strategic Alignment:** Policy makers must balance the imperative to attract foreign direct investment and generate fiscal revenue with international commitments to decarbonization and climate change mitigation.
2. **Economic and Technical Risk:** Offshore exploration in South Africa's deep-water environment involves substantial financial exposure. Exploration and appraisal costs can exceed \$50 million to \$100 million per well (often cited as significantly higher than near-shore operations), while full-scale development requires multi-billion-dollar capital outlays (PwC, 2024).²⁰⁸ With success rates traditionally ranging between 15% and 20%, the high-risk profile is further exacerbated by extreme

²⁰² Petroleum Agency SA (2026). *2026 Assessment of Petroleum Resource and Reserves*. Internal Report.

²⁰³ IEA (2025b). *World Energy Outlook 2025*. Paris: IEA.

²⁰⁴ Republic of SA (2022). *State of the Nation Address by President Cyril Ramaphosa*. Cape Town: Parliament of South Africa.

²⁰⁵ Presidential Climate Commission (PCC) (2024). *The Just Energy Transition Investment Plan (JET IP) for South Africa*. Pretoria: Republic of South Africa. climatecommission.org.za.

²⁰⁶ Department of Mineral and Petroleum Resources (DMPR) (2026). *Strategic Plan 2025/26 – 2029/30*. Pretoria: Government of South Africa. dmr.gov.za.

²⁰⁷ PwC South Africa (2024). *South Africa Energy Review 2024: Navigating the Energy Transition*. PricewaterhouseCoopers pwc.co.za.

²⁰⁸ PwC (2024). *South Africa Energy Review: Navigating High-Stakes Exploration*. pwc.co.za

technical requirements, such as advanced recovery techniques necessitated by powerful ocean currents and ultra-deepwater depths.

3. **Regulatory and Legal Complexity:** The sector faces significant delays due to a highly litigious and legally complex environment. This is largely driven by a combination of factors, which include:

- (i) Opposition to oil and gas mainly by environmental activists/non-governmental organizations, coastal fishing communities, and indigenous communities by appealing the oil and gas activities' authorising decisions using internal appeals, including taking them on legal review to judicial courts,
- (ii) Climate change activism, a crucial component of net-zero emissions and energy transition, advance message of incompatibility between offshore oil and gas and transition to low carbon energy future; called in South Africa just transition.
- (iii) Permitting processes (including associated bottlenecks): oil and gas applications are processed by multiple government departments under multiple laws such as the Mineral and Petroleum Resources Development Act of 2002 (MPRDA), which is soon to be replaced by the Upstream Petroleum Resources Development Act of 2024 (UPRDA), and the National Environmental Management Act of 1998. This results to lengthy decision-making timelines, with the situation worsened by the delays in making the decisions including the time taken by the judiciary in handling the legal review applications (DMPR, 2026).²⁰⁹

These challenges have reached a critical inflection point; five major exploration initiatives are currently stalled due to ongoing litigation regarding Environmental Impact Assessments (EIAs). Despite the August 2025 ruling setting aside authorizations for Block 5/6/7, industry majors like Shell and TotalEnergies maintain their presence, with TotalEnergies targeting a drilling campaign in the Deep-Water Orange Basin for late 2026, pending final environmental clearances (DMPR, 2026).

The Upstream Petroleum Resources Development Act, No. 23 of 2024, emerged through the separation of petroleum provisions from the Minerals and Petroleum Resources Development, 2002 (Act No. 28 of 2002) (as amended) in order to have two independent legislations to bring about stability and security to investors in the Upstream Petroleum sector and Mining sector (DMPR, 2026)

²⁰⁹ Department of Mineral and Petroleum Resources (DMPR) (2026). *Status of Upstream Exploration and Regulatory Transition Report*. Pretoria: Government of South Africa.

The UPRD Act also provides for the establishment of the South African National Petroleum Company (SANPC) which aims to establish itself as a leading entity in Southern Africa's petroleum and gas sector by ensuring energy security, driving technological innovation, developing and enabling essential infrastructure, fostering strategic partnerships, and promote social and economic development. The mission of the SANPC is to oversee the strategic planning, coordination, and governance of the country's petroleum and gas resources, thereby contributing to national development and economic growth.

While South Africa's offshore oil and gas capacity is still very limited, its onshore midstream and downstream activity is well-established, particularly in the refining and processing of oil, coal and gas. However, South Africa's liquid fuels sector is undergoing a period of structural transition marked by declining domestic refining capacity and increasing dependence on imported petroleum products. At the same time, global geopolitical developments—particularly disruptions in the Middle East—have heightened supply risks and contributed to significant volatility in global energy markets.

South Africa's operational conventional crude oil refining capacity has contracted by 59.1%, declining from a historical baseline of 508,000 barrels per day (bpd) to the current operational level of 208,000 bpd.

South Africa is also a key location for many local, regional and multinational oil and gas companies active in the value chain. Particular expertise has been achieved in several areas of the overall upstream and midstream value chains, including fabrication and construction, ship and rig repair and maintenance, distribution and logistics, as well as exploration and production services.²¹⁰

9.3 Current interventions

South Africa's offshore energy sector remains a strategic component of the country's broader economy. The Ocean Economy Master Plan (OEMP) continues to advance the effort initiated within Operation Phakisa – Oceans Economy to promote the exploration and production of offshore oil and gas through increased investment into and removal of barriers to the sector (DMRE, 2025).²¹¹

Regional developments in Southern Africa underscore the potential scale of offshore energy. Namibia drilled 21 offshore exploration wells between November 2021 and April 2025, with an estimated 10

²¹⁰ SAOGA (2021). *Established Upstream and Midstream Activity*, South African Oil and Gas Alliance (SAOGA), accessed on 21 February 2022, available at: <<https://www.saoga.org.za/web/oil-and-gas-overview/established-upstream-and-midstream-activity>>

²¹¹ DMRE (2025). *Annual Report on Energy Security and Liquid Fuels*. Department of Mineral Resources and Energy, Republic of South Africa.

additional wells planned for 2026, projecting production of approximately 300,000 bpd by 2030 (Westwood Global Energy, 2025).²¹² These successes provide a benchmark for South Africa's ambitions for offshore oil and gas sector activities.

South Africa's offshore exploration is governed by the Mineral and Petroleum Resources Development Act (MPRDA) and aligned regulations under the Petroleum Agency SA (PASA). As of April 2026, there are 20 valid licenses offshore, held by mostly multinational companies such as TotalEnergies, Shell, Impact and others. There are 17 companies holding licenses offshore through mainly joint venture partnerships.

The offshore licensing environment is dynamic:

- Companies frequently adjust holdings by forming partnerships, relinquishing rights, or selling acreage to manage financial and operational risk.
- Currently, six production licenses are in place: five held by PetroSA and one by private sector operators, including onshore production projects like Renegen2).²¹³

Since 2025 and early 2026, South Africa's offshore energy sector is undergoing a regulatory "fundamental reset" focused on legislative reform, specifically separating petroleum governance from mining's Mineral and Petroleum Resources Development Act of 2002 (MPRDA) via the Upstream Petroleum Resources Development (UPRD) Act.²¹⁴ As of April 2026, the preparatory work for the implementation of the UPRD Act is in advanced stages, with the expectations that the UPRD Act will come into effect before the end of 2026.

Investment in the sector has grown over the past years, however, it has recently started declining due to stalling projects as a result of litigations on key projects and lengthy appeals. However, despite the challenges the industry has faced over the past 8 years, the investment made into the industry by private companies is in excess of \$390 million (PASA, 2025). This amount was spent on acquisition of data, mainly seismic data and the drilling of wells offshore.

²¹² Westwood Global Energy (2025). *Sub-Saharan Africa Upstream Review: Namibia and South Africa Outlook*. Westwood Global Energy Group.

²¹³ Petroleum Agency SA (2025). *Petroleum Exploration Opportunities Brochure (2025)*. Petroleum Agency South Africa.

²¹⁴ Republic of South Africa (2024). *Upstream Petroleum Resources Development Act, No. 23 of 2024*. Government Gazette.

Operation Phakisa - Ocean economy had initially, in 2014, identified eleven priority initiatives to support offshore oil and gas development, including the establishment of a phased gas pipeline network for domestic supply. The related pipeline project remains under environmental assessment with subsequent analysis indicating that its feasibility is contingent on proximity to gas sources and demand centres, which have only recently become clearer (IEA, 2025).²¹⁵ As such, the pipeline design will need to reflect resource location, cost-effectiveness, and market demand to ensure strategic alignment with South Africa's energy security objectives that are led from the Department of electricity and Energy (DEE).

Despite the sector's nascent stage, offshore exploration continues to attract interest:

- Exploration success is concentrated in the Orange Basin (west coast) and Outeniqua Basin (south coast), which have potential resources of ~34 billion barrels of oil and ~60 TCF of natural gas, respectively (Petroleum Agency South Africa, 2025).
- South Africa's offshore development is informed by regional precedents, including Namibia's discoveries (Orange Basin) and Mozambique's Rovuma LNG fields, which highlight the commercial potential of deepwater exploration and provide lessons in infrastructure, financing, and regulatory alignment (Westwood Global Energy, 2025).⁴⁷

Domestic offshore production remains limited, with PetroSA Mossel Bay GTL operations contributing a minor share (~3%) at its peak, of liquid fuel requirements. South Africa continues to rely on imported oil (~89% of total crude requirements) 12

9.4 Challenges

Despite the significant geological potential of South Africa's offshore basins, exploration activity has historically remained limited compared to other emerging petroleum provinces. Several structural and regulatory factors continue to influence investor confidence and the pace of offshore exploration and appraisal activities (PASA, 2025).²¹⁶

Key challenges include:

- **Regulatory and permitting timelines.** Environmental authorisation processes and associated legal appeals can extend project timelines and introduce uncertainty for investors. While environmental

²¹⁵ IEA (2025). *World Energy Outlook 2025: Africa Energy Analysis*. International Energy Agency (IEA).

²¹⁶ Petroleum Agency SA (2025). *South African Exploration Opportunities*. Petroleum Agency South Africa.

governance remains essential, prolonged approval processes may reduce the competitiveness of South Africa as an exploration destination.²¹⁷

- **Litigation risk and regulatory uncertainty.** Exploration activities have in some cases been delayed by legal challenges following the granting of exploration rights. Such uncertainty can influence investment decisions in highly competitive global exploration markets.
- **Limited exploration drilling.** Compared with many offshore basins globally, relatively few exploration wells have been drilled offshore South Africa. Continued exploration drilling is therefore necessary to better understand the petroleum potential of the country's offshore basins (Petroleum Agency SA, 2025).²¹⁸
- **Competition for global exploration capital.** International oil companies allocate exploration budgets globally and tend to prioritise jurisdictions with stable regulatory frameworks, attractive fiscal terms and predictable development timelines.²¹⁹
- **Access to investment capital.** Offshore exploration projects are capital intensive, and investor confidence plays an important role in determining exploration activity.
- **Spatial conflict, particularly with fishing and biodiversity sectors.** Competing for space is becoming a growing constraint for offshore oil and gas in South Africa. Expansion of Marine Protected Areas (MPA), and the locations of the Critical Biodiversity Areas (CBA), Ecological Support Areas (ESA), and EBSAs often overlap with highly prospective zones, thus reducing the acreage earmarked for oil and gas exploration and development. While the Marine Spatial Planning (MSP) may resolve spatial conflicts, there is uncertainty in terms of timing to conclude the process, and its potential impact on oil and gas development is currently unknown; especially.²²⁰
- **Energy transition pressure and Global/SA's commitments to low carbon technologies.** Global shifts towards renewables puts pressure on fossil fuel investments, with some oil and gas companies **diversifying their portfolios**. In addition, access to finance is becoming tied to Environment, Social and Governance (commonly referred to as "ESG") performance, with investors reallocating their capital to low-carbon assets.
- **Infrastructure Constraints**, specifically the lack of dedicated deepwater port facilities and subsea pipeline networks required to bring offshore discoveries to market. While existing assets like the Mossel Bay gas-to-liquids refinery offer some integration potential, significant capital investment is

²¹⁷ DMPR (2024). *Annual Performance Plan 2024/25*. Department of Mineral and Petroleum Resources, Republic of South Africa.

²¹⁸ PASA (2026). *Revised Estimates of Hydrocarbon Potential in South African Offshore Basins*. Bellville.

²¹⁹ IEA (2024). *World Energy Outlook 2024*. International Energy Agency.

²²⁰ DFFE (2024). *Status of Marine Spatial Planning in South Africa*. Department of Forestry, Fisheries and the Environment

needed to upgrade aging marine logistics and establish reliable midstream connectivity to overcome the current reliance on international supply chains.²²¹

Recent discoveries in the Orange Basin offshore Namibia have significantly increased industry interest in the broader basin system and demonstrate the potential of the region's deepwater petroleum systems.²²² Continued exploration will therefore be essential to determine the **commercial potential** of South Africa's offshore basins.

9.5 Opportunities

Despite the challenges outlined above, South Africa's offshore oil and gas sector presents several opportunities that could contribute to economic growth, energy security, and industrial development.

Key opportunities include:

- **Unlocking offshore petroleum resources:** Several offshore basins remain underexplored, including the Orange Basin, Outeniqua Basin, and Durban Basin.²²³ Recent discoveries in Namibia's Orange Basin have significantly increased industry interest in the regional petroleum system and highlight the potential for further exploration in the region.²²⁴
- **Economic growth and fiscal revenues.** Successful exploration and development could generate government revenues through royalties, taxes and other fiscal instruments associated with upstream petroleum production. International experience demonstrates the potential economic impact of major offshore discoveries, as illustrated by the rapid economic growth experienced by Guyana following their recent offshore developments.²²⁵
- **Energy security.** South Africa currently relies heavily on imported crude oil and refined petroleum products. Domestic oil and gas production could therefore reduce import dependence and improve the national balance of payments.²²⁶

²²¹ DMPR (2024). *Annual Performance Plan 2024/25*. Department of Mineral and Petroleum Resources, Republic of South Africa.

²²² TotalEnergies (2022). *TotalEnergies Announces Major Venus Discovery Offshore Namibia (Orange Basin)*. Paris: TotalEnergies Press Release

²²³ Petroleum Agency SA (2024). *Petroleum Exploration Opportunities in South Africa*. [Brochure].

²²⁴ DMPR (2024). *Strategic Plan 2024–2029*. Department of Mineral and Petroleum Resources, Republic of South Africa.

²²⁵ International Monetary Fund (IMF) (2023). *Guyana: Staff Report for the 2023 Article IV Consultation*. Washington DC: International Monetary Fund

²²⁶ DMRE (2025). *Annual Report on Energy Security and Liquid Fuels*. Department of Mineral Resources and Energy.

- **Gas-to-power opportunities.** Natural gas resources, if discovered and developed, could support South Africa's evolving energy mix and electricity supply through gas-to-power projects identified in national energy planning frameworks.
- **Industrial development and supply chains.** Offshore oil and gas development could stimulate growth in related industries such as marine services, logistics, engineering services, and fabrication activities. Existing port infrastructure, including the Port of Saldanha Bay, could support offshore exploration and development activities.²²⁷

The recent assent to the **Upstream Petroleum Resources Development (UPRD) Act 23 of 2024** marks a strategic shift toward addressing these bottlenecks by providing for **third-party access to upstream infrastructure** and establishing a standalone regulatory framework. Once fully operationalized – with draft regulations currently under industry review as of early 2026 – the Act is expected to enhance fiscal predictability and facilitate the shared use of critical assets, thereby lowering the entry barrier for new infrastructure investment.²²⁸

9.6 Skills and transformation

Over the past decade, many of the world's most significant oil and gas discoveries have been made on the African continent. This trend places renewed emphasis on the need to accelerate skills development and transformation within industry so that countries are able to participate meaningfully in the economic opportunities associated with new offshore developments. As mentioned above, offshore oil and gas exploration remains relatively new to South Africa. This adds complexity to efforts aimed at localisation, long-term skills planning (including up-skilling and re-skilling), and securing sustainable funding for training initiatives.

Despite these challenges, South Africa does not necessarily start from a position of zero capacity. The country already possesses a strong technical base derived from established sectors such as mining, engineering, manufacturing, and maritime services. These industries provide a foundation upon which specialised offshore oil and gas skills can gradually be developed. At the same time, the broader

²²⁷ Saldanha Bay IDZ (2025). The Role of Freeport Saldanha in the Southern African Oil and Gas Value Chain. [Institutional Profile].

²²⁸ Republic of South Africa (2024). Upstream Petroleum Resources Development Act, No. 23 of 2024. Government Gazette No. 51463.

transition towards more sustainable energy systems must also be considered when developing long-term strategies for skills development and industry transformation. This underscores the importance of adopting a balanced and phased approach to the energy transition, supported by policies and regulatory frameworks that recognise the specific economic and developmental context of South Africa.

In most petroleum-producing jurisdictions, significant job creation in the oil and gas industry tends to materialise only once projects move beyond the exploration phase and into development and production. However, the specialised technical and engineering skills required for offshore exploration and production can take many years to develop. For this reason, skills development, capacity building, and transformation initiatives cannot be postponed until large-scale development projects commence. Early planning and investment in human capital are necessary if South Africa is to ensure that local professionals and businesses are able to participate meaningfully in future offshore projects.²²⁹

Serious planning for industry-scale skills development typically accelerates following the confirmation of a first material discovery, when the likelihood of project development becomes clearer (for example, discoveries such as the Volstruis prospect anticipated in the Orange Basin). Such discoveries often function as catalysts for more focused industry planning, investment in training programmes, and the mobilisation of specialised technical expertise.

A similar pattern has been observed in other emerging petroleum provinces. In Guyana, for example, the series of offshore discoveries made since 2015 led to a rapid expansion of national training initiatives, technical education programmes and supplier development strategies aimed at increasing local participation in the petroleum sector. Comparable developments are now being observed in Namibia following recent deepwater discoveries in the Orange Basin, where skills planning and institutional capacity building have become central elements of national energy planning.

Several local studies have already highlighted the shortage of engineering and technical skills across multiple sectors of the South African economy. This suggests that the human resource capacity required for a potential expansion of the offshore energy sector does not currently exist at the scale required and will need to be developed progressively from a relatively low base. For example, a 2015 study by the South African International Maritime Institute (SAIMI) found that the skills gap in the oil and gas industry

²²⁹ Westwood Global Energy (2025). Namibia & South Africa: A Tale of Two Basins – Exploration and Capacity Outlook. Westwood Global Energy Group

was particularly pronounced. Skills identified as being in short supply included geologists and geophysicists, engineers (including chemical and geotechnical engineers), drilling specialists, structural engineers, marine specialists, mechanical engineers, deck officers, and skilled artisans.²³⁰

This skills gap represents a significant constraint, as human capital development is a critical component of localisation strategies. Developing the necessary technical skills base will be essential for supporting the emergence of globally competitive supplier firms, as well as enabling the growth of small, medium, and micro enterprises (SMMEs) that can participate in offshore value chains and generate much-needed employment opportunities within the broader economy.

9.7 Research, development and technology

Research, data acquisition and technological innovation play a significant role in advancing the understanding and responsible development of offshore petroleum resources. South Africa has a well-established scientific and technical research base, supported by universities, research institutions and government agencies involved in marine science, geoscience, and oceanographic research.²³¹ These capabilities provide an important foundation for improving the understanding of the country's offshore basins and marine environment.

Advances in geophysical imaging, digital geoscience workflows and offshore engineering technologies have significantly improved the ability to explore and evaluate offshore petroleum systems. Modern seismic acquisition and processing technologies, for example, have enabled improved imaging of complex geological structures and deeper stratigraphic intervals, which has contributed to renewed interest in several of South Africa's offshore basins. Continued investment in scientific research and data acquisition therefore remains essential for strengthening the geological understanding of the offshore environment and reducing exploration risk.²³²

Improved geological knowledge of offshore basins is closely linked to the availability and interpretation of high-quality geophysical data, including regional seismic surveys and basin-scale geological studies. It plays a critical role in identifying prospective petroleum systems, refining basin models and supporting

²³⁰ South African International Maritime Institute (SAIMI) (2015). *Operation Phakisa Skills Development Roadmap for the Offshore Oil and Gas Industry in South Africa*. Cape Town: SAIMI.

²³¹ Department of Science and Innovation (DSI) (2021). *South African Marine and Antarctic Research Strategy*. Pretoria: Government of South Africa.

²³² Department of Science and Innovation (DSI) (2021). *South African Marine and Antarctic Research Strategy*. Pretoria: Government of South Africa.

more informed exploration decision-making. As exploration activity expands in frontier basins such as the Orange Basin, continued collaboration between industry, government and research institutions will be important for advancing the scientific understanding of the offshore systems.

To support research opportunities and promote dialogue on offshore exploration activities, the former Minister of Science and Technology, Naledi Pandor, launched the South African Marine Research and Exploration Forum (SAMREF) in 2016. SAMREF is a joint initiative of the Department of Science and Innovation and the Offshore Petroleum Association of South Africa (OPASA), and forms part of Operation Phakisa's Oceans Economy programme.²³³

The Forum was established to facilitate collaboration between government institutions, research organisations, the petroleum industry, and other stakeholders involved in offshore scientific research. Its purpose is two-fold:

- Identify and take advantage of opportunities provided by offshore oil and gas exploration activities and platforms, including the collection of important marine ecosystem data that would otherwise be difficult and expensive to obtain; and
- Facilitate new collaborative offshore studies that increase South Africa's knowledge of the offshore marine environment, including renewable energy potential, marine biodiversity and ecology, climate change, and ecosystem functioning.

SAMREF encompasses members of Government and State-owned entities, research agencies, the oil and gas industry, and representatives of the private sector, and was established to improve voluntary cooperation and data exchange between participants. Operational support is provided by a Secretariat based at the South African Environmental Observation Network (SAEON) Egagasini Node in Cape Town, a business unit of the National Research Foundation (NRF).²³⁴

Although stakeholder engagement has at times been affected by external factors, SAMREF has successfully supported collaboration between industry and South African researchers, including facilitating the exchange of seismic and other offshore datasets. Collaborations of this nature contribute

²³³ Department of Planning, Monitoring and Evaluation (DPME) (2014). *Operation Phakisa: Unlocking the Economic Potential of South Africa's Oceans*. Pretoria: Government of South Africa.

²³⁴ National Research Foundation (NRF) (2024). SAEON Egagasini Node: Marine Research and Industry Collaboration Report.

to improving the scientific understanding of South Africa's offshore environment and support informed decision-making related to offshore resource development.²³⁵

9.8 Energy security and environmental sustainability

At the 26th Meeting of the Conference of the Parties (COP26) in 2021, global commitments to expedite the transition of the energy sector to achieve net zero emissions by 2050 were reaffirmed. As the 12th largest emitter of greenhouse gases globally, with per capita emissions significantly exceeding the global average, South Africa has pledged under the 2015 Paris Climate Agreement to further reduce its emissions and contribute to global efforts to achieve the 1.5°C temperature target.²³⁶ These commitments necessitate that South Africa's greenhouse gas emissions peak by 2025, followed by a marked decline from 2026 onwards. Given that we are already in 2026, this will require a rapid and substantial reduction in emissions from the energy sector, particularly in electricity generation and liquid fuels, alongside the adoption of cleaner energy solutions, including wind, solar, and hydro power.²³⁷

South Africa finalised and published its Just Energy Transition Investment Plan (JET-IP) in 2022, ahead of the UNFCCC's COP27.²³⁸ The JET outlines goals for shifting from coal dependency to low-carbon economy. South Africa also approved the first-ever roadmap for "transitioning away from fossil fuels" at UNFCCC COP27.²³⁹ A wholesale phase-out of fossil fuels would require consensus within the UNFCCC signatories, and there is currently no consensus on the phase-out of fossil fuels as noted from the outcomes of COP27 (2022) and COP29 (2024).

Given South Africa's high rate of inequality, poverty, and unemployment, its high dependence on fossil fuel imports, and its vulnerability to oil price volatility (currently about US\$91 per barrel) and the ZAR/USD exchange rate, the country faces significant challenges. In recognition of the physical impacts of climate change, South Africa recognises the need to contribute climate change mitigation through a just transition to cleaner, more sustainable, indigenous, and reliable sources of oil and gas, coupled with greener energy solutions. This transition must take place in a way that is just. It should leave no one behind, and it should

²³⁵ National Research Foundation (NRF) 2021. *South African Environmental Observation Network (SAEON) Programme Overview*. Pretoria: National Research Foundation.

²³⁶ DFFE (2024). *South Africa's Low Emission Development Strategy 2050*. Department of Forestry, Fisheries and the Environment.

²³⁷ National Treasury (2021). *What is the most appropriate tax regime for the oil and gas industry*.

²³⁸ <https://justenergytransition.co.za/wp-content/uploads/2024/10/South-Africas-Just-Energy-Transition-Investment-Plan-JET-IP-2023-2027-FINAL-1.pdf>

²³⁹ <https://www.gov.za/news/media-statements/minister-barbara-creecy-unpacks-south-africa%E2%80%99s-just-energy-transition>

set the country onto a new, more equitable and sustainable development path – one which builds new local industries and impacts the value chain.²⁴⁰ Furthermore, this ‘Just Energy Transition’,²⁴¹ should not come at the expense of sacrificing South Africa’s energy security.

In order to meet net-zero goals by 2050 and mitigate the adverse effects of climate change, the South African economy will eventually need to be built on a very different energy mix than what is currently in place, with a different suite of energy-related commodities and technologies. This energy mix will likely see a gradual transition from an overreliance on coal (~80%) to a more diversified energy portfolio that includes oil and gas, nuclear (4%), and renewable sources such as hydroelectric power (~3%), geothermal energy, hydrogen, wind, and solar power (7-9%).²⁴²

The envisaged scale and depth of the transition will require substantial investments and international support over an extended period. Significant financial, technological, and capacity support will be essential to facilitate the decarbonisation of South Africa’s entrenched energy sectors. Early interventions in these sectors will be critical. Concurrently, South Africa will be vulnerable to a range of transition risks posed by the global economic trend toward a low-carbon future, including facing mounting trade pressure from its key trading partners, including the EU, China, the US, the United Kingdom, Japan, and South Korea, as they implement their low-carbon commitments.²⁴³

The government’s strategy to facilitate a Just Energy Transition involves the integration of renewable energy technologies alongside natural gas as a transitional fuel.⁷⁹ This combination represents the most cost-effective energy mix to accelerate South Africa’s decarbonisation efforts. Although natural gas is a fossil fuel, its carbon dioxide (CO₂) emissions are approximately 50% lower than those of coal, thereby positioning it as a significant transitional fuel as the economy evolves towards lower-carbon, renewable, and energy-efficient technologies. This strategy aims to support the transition to a lower-carbon economy while ensuring energy security, affordability, and accessibility for all.²⁴⁴

²⁴⁰ National Business Initiative (NBI) (2021). ‘The role of gas in South Africa’s path to net-zero’.

²⁴¹ Although there is no standard definition of the term, the International Labour Organisations (ILO) defines the concept as a “systemic and whole of economy approach to sustainability...[it] includes both measures to reduce the impact of job losses and industry phase-out on workers and communities, and measures to produce new, green and decent jobs, sectors and healthy communities”.

²⁴² Presidential Climate Commission. (2025, February 19). Energy dialogue: The role of nuclear in South Africa’s energy mix. <https://www.climatecommission.org.za/events/energy-dialogue-the-role-of-nuclear-in-south-africas-energy-mix>.

²⁴³ NBI (2025). South Africa’s 2035 Nationally Determined Contribution: Opportunities for Investment. National Business Initiative. Available at NBI.

²⁴⁴ National Treasury (2021). *What is the most appropriate tax regime for the oil and gas industry*.

This view is supported by the aforementioned NBI report, which concluded that, if supplied affordably, gas can serve as a transition fuel for South Africa. It has the potential to replace coal and provide the necessary flexible capacity to enable a rapid expansion of renewable energy sources. This role is anticipated to continue until alternative energy storage solutions and greener fuels become more affordable for the country.²⁴⁵

South Africa's Just Energy Transition aims to balance lowering greenhouse gas emissions with energy security, utilizing natural gas as a transitional fuel alongside renewable energy. To support this, legislative action is required that aligns the growth of the offshore oil and gas industry with the development of a sustainable, inclusive ocean economy.

It may also necessitate investigating how other jurisdictions implement carbon offsetting to achieve carbon neutrality through, for example, the granting of production rights linked to renewable projects elsewhere in the country. Additionally, a viable strategy could be to increase public awareness of the potential contributions, and economic opportunities and benefits provided by offshore petroleum exploration, while simultaneously enabling South Africa to achieve its international commitments in respect of climate change and decarbonisation.

Further matters requiring consideration:

The Paris Agreement promotes the recognition of common but differentiated responsibilities (CBDR), a principle in international environmental law that recognises that all states have a duty to address global environmental problems such as climate change, but not in the same way.²⁴⁶ In the light of different national circumstances, the Paris Agreement differentiates between developed, least developed and developing countries. The Paris Agreement expects all countries to contribute to combating climate change and developing and least-developed countries are recognised as requiring support (in the form of knowledge transfer and financial support) and that they will take longer to peak in their emissions than developed countries.²⁴⁷ Fossil fuels remain a desirable component of the energy source mix within developing and least-developed countries such as South Africa. Likewise advance economies such as

²⁴⁵ NBI (2025). South Africa's 2035 Nationally Determined Contribution: Opportunities for Investment. National Business Initiative. Available at NBI.

²⁴⁶ Common by differentiated responsibilities. Britannica international environmental law. Available at: Common but differentiated responsibilities (CBDR) | Britannica

²⁴⁷ UNFCCC Paris Agreement (November 2015). Available at: Paris Agreement English (unfccc.int)

US and parts of Europe still rely on natural gas and oil for baseload power and industry. In essence while renewables grow, fossil fuels provide grid stability.

The Paris Agreement establishes a framework for global action, including mitigation of greenhouse gas emissions, with the following key elements worth observing as they are of particular significance to the South African context:

Nationally Determined Contributions (NDC): The parties to the Agreement are required to prepare and maintain NDCs, and basically these are climate-action plans which set targets for cutting greenhouse-gas emissions and adapting to climate change. In its second NDC submitted in October 2025, South Africa commits to reduce annual GHG emissions to approximately between 320-380 million tonnes of CO₂-equivalent by 2045.²⁴⁸ Of significance and as part of the economy-wide emission reduction and mitigation efforts, the 2025 NDC aligns with the Integrated Resource Plan for electricity, carbon tax, and the Green Transport Strategy as policies/plans that must be implemented.²⁴⁹ The former outlines a key role for natural gas in the energy mix; while the latter treats oil and gas as transition fuels. In addition, while the NDC emphasises the transition, it does not put a hard, sector-specific cap on new oil and gas development, and it does not explicitly mention the phasing out of exploration. This shows that oil and gas development is still much relevant for the country's energy security needs and economic growth.

9.9 Policy considerations

The primary legislation governing the upstream sector, which also covers the mining sector, is the Mineral and Petroleum Resources Development Act 28 of 2002) ('the MPRDA'). The MPRDA governs the acquisition, use, and disposal of mineral rights in the country and was enacted to facilitate equitable access to and the sustainable development of the nation's mineral and petroleum resources. Under the MPRDA, the Minister of Mineral Resources is empowered to authorise companies to explore for, and produce, oil and gas. Since 2013, significant amendments to the MPRDA have been proposed via various iterations of the Mineral and Petroleum Resources Development Amendment Bill 15 of 2013. An uncertain legislative environment, together with declining oil prices between 2014 and the end of 2020,

²⁴⁸ https://unfccc.int/sites/default/files/2025-10/South%20Africa%27s%20second%20Nationally%20Determined%20Contribution_2025.pdf

²⁴⁹ DFFE (2025). South Africa's Second Nationally Determined Contribution (NDC). Department of Forestry, Fisheries and the Environment.

has played a role in retarding the uptake and implementation of several Operation Phakisa-Oceans Economy drilling objectives.²⁵⁰

The Upstream Petroleum Resource Development (UPRD) Act of 2024 (UPRDA), together with the National Environmental Management Act of 1998, replace the relevant sections (Chapter 6) of the Mineral and Petroleum Resources Development Act of 2002 (MPRDA) which pertain to upstream petroleum activities. This new UPRD act will, when in operation, reduce the lengthy decision-making timelines in permitting arrangements caused by multiple governments departments in their processing, as well as delays caused by the time taken by the judiciary in handling the legal review applications (DMPR, 2026).²⁵¹

The persistent challenges of prolonged processing times and granting of permits and/or rights, ongoing and incessant appeals against environmental authorisations, a misinformed public and inadequate stakeholder engagement, continue to create barrier to exploration and production (E&P) companies and investors. It is hoped that the new UPRD Act will contribute to resolving some of these challenges as a dedicated and standalone legal framework meant to encourage further uptake of oil and gas rights in South Africa. Thus, UPRD Act seeks to accelerate exploration and production, without making unnecessary fiscal concessions that will substantially impair long-term revenue prospects for South Africa.

The UPRD Act has all fiscal provisions removed from it and has retained only those already included in the Income Tax Act and the Mineral and Petroleum Resources Royalty Act of 2008. This occurrence is not uncommon, since the Constitution prescribes that fiscal matters fall under the responsibility and domain of National Treasury. In this regard, a report discussing the fiscal elements of South Africa's oil and gas regime, with a focus on tax policy, was published by National Treasury for public review and comments in December 2021. The State's free-carry in a petroleum right – a critical consideration for international investors – remains at 20%, as provided for in the original draft of the Bill (at present, state participation is capped at 10% within the MPRDA).

²⁵⁰ SAIMI, 2015. *Operation Phakisa skills development roadmap for the Offshore Oil and Gas industry in South Africa*, the South African International Maritime Institute (SAIMI).

²⁵¹ Department of Mineral and Petroleum Resources (DMPR) (2026). *Status of Upstream Exploration and Regulatory Transition Report*. Pretoria: Government of South Africa.

President Ramaphosa assented to the Upstream Resources Development Bill on 25 October 2024, thereby enacting it as law now known as the Upstream Petroleum Resources Development Act 23 of 2024 (the UPRDA) on 29 October 2024. The draft Regulations of the UPRDA were published by DMPR on April 14th, 2025, for public comment.²⁵² An updated version of the regulations, following feedback from the public and industry stakeholders, for further commentary, was circulated by DMPR on 21 January 2026. According to Cliff Decker Hoffmeyer, some of the main features in these 2026 draft Regulations are:

- An introduction of a cost recovery regime/framework
- Clear and extended discovery and appraisal timelines
- Increase Local Content participation and consultation requirements
- Stringent and comprehensive health and safety standards.²⁵³

The way in which these Regulations will be implemented, administered, and enforced will be key to ensuring a viable, equitable, and sustainable upstream industry in South Africa.

South Africa also lacks regulatory clarity on incorporating climate change impact assessment into oil and gas exploration projects, particularly as it relates to environmental impact assessment processes. This has created an opportunity for the anti-oil and gas groups to challenge the full lifecycle greenhouse gas analysis (covering scope 1-3 emissions), or lack thereof, through appeals and legal reviews. In essence, the expectation of anti-oil and gas groups is that the EIA assessments for the proposed exploration activities include the climate change impact assessment for production operations, regardless of whether the operator will proceed to the production stages of the project or not. The national Guideline for the Consideration of Climate Change Implications in Applications for Environmental Authorisations, Atmospheric Emission Licences and Waste Management Licences, published on 24 October 2025 for public comment does not cure this defect. A dire need for regulatory clarity on this aspect is required.⁸²

- Offshore oil and gas activities operate under the integrated environmental management framework, which in most cases is designed for terrestrial environment. Implementing this regulatory framework becomes a challenge in some instances and often gets subjected to different interpretations when

²⁵² Petroleum Agency South Africa (2025, April 14). Publication of draft regulations for the Upstream Petroleum Resources Development Act. <https://www.petroleumagencyrsa.com/publication-of-draft-regulations-for-the-upstream-petroleum-resources-development-act/>

²⁵³ Cliffe Dekker Hofmeyr (2026, February 4). Key developments from the Draft Upstream Petroleum Resources Development Regulations. <https://www.cliffedekkerhofmeyr.com/en/news/publications/2026/South-Africa/Oil-Gas/Oil-and-Gas-alert-4-February-Key-developments-from-the-Draft-Upstream-Petroleum-Resources-Development-Regulations>

it comes to offshore environment. Whilst this remains a challenge, the Department of Forestry, Fisheries and the Environment (DFFE) is making strides in addressing some of these challenges. For instance, the Financial Provisioning Regulations published in 2015 (largely implementable for onshore operators) are being amended. The EIA regulations, 2014 are also undergoing some amendment and it is opined that supplementing them with Minimum Information Requirements for offshore exploration and production (in the interim, while exploring an appetite for a distinct regulatory framework for oil and gas) will help in achieving the objectives of the One Environment System, by streamlining the environmental permitting processes. Thereby, reducing the permitting timelines.

- South Africa is currently developing climate change instruments aimed at cutting emissions and building climate change resilience. The Climate Change Act, which was promulgated in 2024,²⁵⁴ makes provisions for the establishment of the mandatory national and sectoral emissions targets and carbon budgets for large emitters, strengthening of carbon tax established in 2019, provisions for tax incentives and levies. Several provisions are being operationalised such as Sectoral Emissions Targets. It is worth noting that the draft Sector Emissions Target do not contain emission reduction target for the petroleum sector yet as these are to be co-developed between the DMPR, DFFE associated Agencies and relevant stakeholders.

9.10 Targets and interventions through to 2045

South Africa's offshore oil and gas industry may play a pivotal role in addressing the country's energy security challenges. Notably, discoveries and proven estimated reserves of 3.4 Tcf and 192 Mbbl of condensate along the south coast in blocks 11B/12B. Furthermore, there is an expectation of possible large hydrocarbon finds in the deep-water Orange Basin, alongside significant unconventional resource potential in relation to Shale gas, Coalbed methane gas, and Biogenic gas in the Karoo Basin. According to the Davis Tax Commission, these significant finds could contribute between 3.3% and 9.6% of South Africa's GDP (at 2010 levels), or between 1.1% and 2.8% of projected 2045 GDP levels, representing between 0.98% and 2.4% of total employment (given sustained 4.5% annual growth in GDP to 2045).²⁵⁵ Namibia is a good example of converting potential into tangible growth. In recent years, it has experienced unprecedented oil and gas success with large offshore discoveries such as Graff (Shell and partners), Venus (TotalEnergies and partners), and Mopane (Galp and partners) within the Namibian section of the

²⁵⁴ The Climate Change Act was proclaimed in March 2025; however not all provisions are operational (Proclamation Notice 251 of 2025 in GG No 52319)

²⁵⁵ Davis Tax Commission (DTC) (2016). *Report on Oil and Gas for the Minister of Finance*.

Orange Basin.²⁵⁶ The remarkable success rate of the wells drilled in Namibia, approximately 75%,²⁵⁷ compares favourably to the discoveries made across the Atlantic in Guyana, which have profoundly transformed the South American nation.²⁵⁸ Since 2015, a series of discoveries has resulted in proven oil reserves of nearly 11 billion barrels of oil equivalent and 13.2bcf of associated gas. The economic impact on the Guyanese economy was almost immediate, with revenue increasing from an estimated \$1.4 billion in 2018 to a projected \$50 to \$200 billion in 2050.²⁵⁹ Initial GDP growth was roughly 50 to 60%. By late 2025, Guyana's oil production had peaked at about 900000 barrels/day, up from 120000 barrels/day in 2020.⁸⁰ An almost 86% increase.

The discoveries in Namibia have collectively added an estimated 2.6 billion barrels of oil and 2.2 Tcf of gas reserves to its resource potential, with first production targeted for 2030.²⁶⁰ Preliminary estimates suggest the country may receive \$500 million annually in state revenue from royalties and taxes, potentially contributing up to \$3 billion to the country's annual GDP, thereby boosting the local economy. This projection is not unrealistic, considering Guyana's forecasted oil revenue for 2026 is currently expected to exceed \$3 billion.⁸⁰

Given the proven impact that oil and gas development and production have had and continue to have on countries such as Guyana, as well as the current and projected impacts for Namibia, there is an urgent need to expedite oil and gas exploration in South Africa with the objective of achieving sustainable development and production. Considering that a significant portion of the Orange Basin (~65%) is located within South African waters, where similar prospects and leads have already been identified by the industry and the Petroleum Agency SA, and several well campaigns have already been committed to by rights holders, it is crucial to facilitate an enabling environment.

The economic impact of offshore oil production on the Guyanese economy was almost immediate, with revenue increasing from an estimated \$1.4 billion in 2018 to a projected \$50 to \$200 billion in 2050 (7). Initial GDP growth was roughly 50 to 60%. By late 2025, Guyana's oil production had peaked at about 900000 barrels/day, up from 120000 barrels/day in 2020 (8). An almost 86% increase. The discoveries

²⁵⁶ InvestorNews (2024, June 24). Namibia: Africa's new oil frontier. <https://investornews.com/energy-oil-gas-uranium/namibia-africas-new-oil-frontier/>

²⁵⁷ Africa Oil and Gas Report (2025, January 10). Deepwater Namibia: Despite Shell's write down, there's still lots of life left in the basin. <https://africaoilgasreport.com/2025/01/oil-patch-sub-sahara/deepwater-namibia-despite-shells-write-down-theres-still-lots-of-life-left-in-the-basin/>

²⁵⁸ GET Global Group (2024, May 29). Growth of Guyana's oil and gas industry. <https://getglobalgroup.com/gy/growth-of-guyanas-oil-and-gas-industry/>

²⁵⁹ Leader Engineering (2025, December 18). 2025 oil boom and a nation transformed: Guyana's year in review. <https://leaderengineering.com/2025-oil-boom-and-a-nation-transformed-guyanas-year-in-review/>

²⁶⁰ Mwai, C (2024, June 20). Namibia's push to become an oil producer by 2030 is on pause, here's why. Business Insider Africa. <https://africa.businessinsider.com/local/markets/namibias-push-to-become-an-oil-producer-by-2030-is-on-pause-heres-why/02elec4>

in Namibia have collectively added an estimated 2.6 billion barrels of oil and 2.2 Tcf of gas reserves to its resource potential, with first production targeted for 2030.²⁶¹

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Other interventions planned for the period will focus on leveraging new innovations, new technologies, enabling infrastructure, and increasing investment to increase production.

A key driver of sustained growth in this sub-sector over the long-term (5+ years) will be the ability to balance effective and efficient exploration with sustainable extraction of offshore reserves. This must be achieved without inflicting irreversible damage to the environment, thereby disadvantaging future generations.

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²⁶¹ Mwai, C (2024, June 20). Namibia's push to become an oil producer by 2030 is on pause, here's why. Business Insider Africa. <https://africa.businessinsider.com/local/markets/namibias-push-to-become-an-oil-producer-by-2030-is-on-pause-heres-why/02elec4>

The interventions to stabilise, revive, and grow the sub-sector to 2045 are detailed below

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
Legislation and policy	Establish a stable, transparent and investment-friendly legislative and regulatory framework that provides policy certainty, streamlines approvals and aligns the offshore oil and gas sector with national development priorities.			X	Finalise and implement the UPRDA and supporting regulations to create a stable, competitive and investment-friendly offshore oil and gas regulatory framework.	Lead: DMPR Support: PASA, DFFE, DTIC, DEE, DWS, NT
			X		Establish a formal intergovernmental coordination mechanism to streamline permitting, environmental approvals and sector oversight across departments.	Lead: DMPR Support: PASA, DFFE, DEE, DTIC
			X		Develop and implement fiscal stability mechanisms as provided for in both Tenth Schedule and Mineral and Petroleum Resources Royalties Act (MPRRA) to provide long-term certainty and improve investor	Lead: DMPR & NT Support: PASA

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
					confidence in offshore oil and gas projects.	
Accelerate transformation	Drive inclusive participation and economic transformation in the offshore oil and gas sector through strengthened B-BBEE implementation, local content development, supplier development and targeted support for emerging and black-owned enterprises.			X	Implement and monitor B-BBEE ownership and participation requirements for offshore exploration and production rights.	Lead: DMPR Support: PASA
				X	Implement targeted transformation and supplier development interventions as per UPRDA Act through: - Enterprise and Supplier Development (ESD) programmes; - incubation and financing support for emerging suppliers;	Lead: DMPR Support: PASA, DTIC, DSBD (SEDFA), IDC

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
					mentorship, technical support and market access programmes;	
Institutional arrangements	Strengthen institutional coordination, governance capacity and regulatory efficiency across government entities responsible for offshore oil and gas development, permitting, environmental oversight and state participation.		X		Strengthen the institutional mandates, governance frameworks and resource capacity of PASA and SANPC to support effective regulation and oversight of the offshore oil and gas sector in line with the UPRDA.	Lead DMPR Support: PASA, SANPC
Expand exploration and appraisal	Increase offshore exploration, appraisal and production activities through improved investment attraction, reduced regulatory delays, enhanced stakeholder engagement and competitive licensing mechanisms		X		Strengthen and streamline stakeholder and community consultation processes through standard consultation guidelines and templates whilst also ensuring compliance with licence conditions and environmental requirements.	Lead: DMPR & PASA Support: DFFE, COGTA

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
				X	Implement targeted interventions to increase offshore exploration investment and drilling activity, including competitive licensing rounds and global investment promotion.	Lead: DMPR Support: PASA
Industry development and market growth	Expand and strengthen South Africa's offshore oil and gas industry by improving market access, promoting regional and international partnerships, and enhancing investor facilitation.			X	Improved functionality and effectiveness of One-Stop-Shop and information platform for offshore oil and gas facilitated.	Lead: DMPR (PASA) Support: the dtic (ISA) DIRCO, Industry associations, DSBD (SEDA, SEFA) DOT (SAMSA)
				X	Strengthening trade and partnership agreements with other oil and gas producing countries in the region (SADC), on the continent, and internationally to optimise market access	Lead: DMPR Support: PASA, DIRCO the dtic (ISA), Industry associations, DSBD (SEDA, SEFA), DOT (SAMSA)

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
Environment and Just Transition	Promote environmentally responsible offshore oil and gas development that supports climate resilience, emissions reduction, environmental protection and a balanced transition toward a lower-carbon economy			X	Interim Incident Management Organisation (IMOrg) environmental protection efforts strengthened.	Lead: DoT, SAMSA Support: DMPR, PASA, DFFE Industry, the DTIC
				X	Legal and policy framework to reduce carbon emissions and ensuring the domestication of MARPOL protocols relating to decarbonisation developed	Lead: DoT & SAMSA Support:
				X	Promoting regional climate change responses, including use of oil and gas as transitional fuels (i.e. power generation) to a lower-carbon economy	Lead: PASA Support: DMPR, DFFE
Skills development and capacity building	Develop a skilled, globally competitive workforce and institutional capability to support the growth, safety, innovation and long-			X	Update and implement skills strategy roadmap that will enable development of enhanced skills and capacity building appropriate for the offshore oil	Lead: DMPR, DHET (SAIMI) Support: PASA, DMPR, Industry

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
	term sustainability of the offshore oil and gas sector.				and gas sector activity using modern technologies and safety standards.	
			X		Community of Practice (COP) for the industry and academia established and implemented to encourage collaboration and skills development (e.g. Wits, UWC and other institutions) for increased O&G capacity [PASA Internship programmes, vocational skills, PASA - led Upstream Training Trust funding)	Lead: DMPR Support: PASA, DIRCO, the dtic (ISA), Industry associations, DSBD (SEDA, SEFA), DOT (SAMSA), SETAs, DPE (TE, Transnet Academy), DHET(NSA)
				X	Build local capacity to offer OPITO and IMO related qualifications for oil and gas, including developing academic institutions (such as MOGA and a minerals and energy training institute) focused on providing minerals and	Lead: DHET Support: SAIMI, DMPR, PASA, Offshore oil & Gas industry, Universities, TVETS and technical colleges.

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
					energy sector knowledge to serve the oil and gas and energy industry	
				X	Methodically and intently develop and retain generic and transferable skills such as artisans and technicians, including skills that are transferrable from current coal-fired power generation and mining facilities to renewable and sustainable energy options	Lead: DHET Support: DMPR, SAIMI, Industry, academic institutions (universities, TVETS and colleges)
Research, development, technology and innovation	Advance research, innovation and technology development to improve offshore geological understanding, reduce exploration risk, and strengthen local technological capability			X	Develop capability for sub-surface research data gathering.	Lead: DFFE & DMPR Support: NT, DSTI and DPWI, PASA
				X	Joint partnerships, including co-funding arrangements, between government, industry and other social and international partners for undertaking	Lead: DMPR (SANEDI), DSTI - SAMREF (SAEON) Support: DHET (SAIMI & NSF) Universities, PASA, State research entities,

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
					oil and gas technology and innovation research established.	
				X	Emerging alternative energy technologies (e.g. fuel cells storage, incubators, hydrogen generation) awareness and opportunities publicised.	Lead: DMPR (SANEDI), DSTI - SAMREF (SAEON) Support: DHET (SAIMI & NSF) Universities, PASA, State research entities
				X	The rolling out of innovation/technology demonstration centres to ensure technology transfer to industry and communities facilitated.	Lead: DSTI, SAEON, CSIR, Universities Support: Industry, NOC and IOCs, PASA, state entities, DHET.
Adequate resourcing and Investment	Mobilise sustainable public and private sector investment, funding instruments and financial partnerships to support offshore exploration, infrastructure development and industry participation			X	Funding mechanism for investment and participation into the offshore oil and gas industry investigated, facilitated and established (e.g. “Junior Offshore Petroleum Resources” - a Mining) Development Fund by DMPR),	Lead: DMPR (CEF) in consultation with NT, IDC Support: DFFE, the dtic, Local and international DFIs, National Treasury, Dtic (SABS)

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
Enhance public awareness	Build public understanding, stakeholder alignment and community support for offshore oil and gas development through transparent communication, structured engagement and awareness programs.		X		Community awareness programmes for the oil and gas industry established and implemented • Hosting the National Energy Dialogue to derive a common approach towards the “Just Energy Transition” and associated plans to achieve energy sustainability • Hosting the Industry and Stakeholders Colloquium to facilitate multi-stakeholder alignment on environmental best practice standards and guidelines • engagements with stakeholders, communities, interest groups, and traditional authorities	Lead: PASA Support: GCIS, DFFE, CONTRALESA, House of Traditional Leaders (National & Provincial), Khoisan Leaders

Focus Area	Intervention	Implementation Timeframe			Target	Institutions
		1-2 Years	2-5 Years	5+ Years		
				X	Review oil and gas stakeholder consultation guidelines to enhance adequacy of industry consultation processes with communities and key stakeholders and finalise development of decommissioning guidelines, as well as enhance compliance monitoring and enforcement thereof	Lead: DMPR Support: PASA, DFFE
			X		Career awareness in oil and gas jointly promoted through collaboration among all social partners.	Lead: PASA Support: DMPR, Industry, SAIMI , DBE, South African College Principals.
		X			Offshore oil and gas career awareness and promotion programme developed and implemented including use of SAIMI skills publicity repository.	Lead: DHET (SAIMI) Support: DBE, South African College Principals and industry (SAOGA)

9.11 Conclusion

South Africa's offshore energy sector must strategically pivot toward balancing immediate gas-powered energy security with a long-term transition into a diversified marine energy hub by 2045. This shift requires urgent investment to offset natural resource decline while integrating offshore wind and green hydrogen to secure the necessary economic transition.

The South African Oceans Economy Master Plan serves as the formal blueprint for stabilizing and reviving the maritime sector. It transitions from high-level strategic alignment to a phased Plan of Action (OEMP), fostering co-creation between government and industry. The objective is to unlock socio-economic potential through:

- Detailed Implementation Plans: Targeted short-, medium-, and long-term interventions.
- Policy Mechanisms: Identifying regulatory levers to promote inclusive growth and job creation through 2045.

The offshore sub-sector operates within a global "energy addition" phase, where fossil fuels grow alongside renewables to meet surging demand. Key indicators from the IEA and Vitol highlight:

- Demand Resilience: Global electricity demand grew by 4.2% in 2024, far outpacing total energy growth. While renewables reached 32% of global electricity generation, they account for only 14.6% of total primary energy, indicating a slower displacement of hydrocarbons in heavy industry and transport.
- Extended Oil Horizon: Peak oil demand is now projected for the mid-2030s, driven by slower-than-anticipated EV adoption.

South Africa's transition relies on leveraging the Orange and Outeniqua Basins to replace aging infrastructure and mitigate natural resource decline.

- Operational Imperatives: Success is contingent on accelerating regulatory approvals to attract high-stakes investment for deep-water developments.
- Investment Security: Capital must be secured for high-cost offshore assets amidst global pressure for decarbonization.
- Diversification: The strategic integration of offshore wind and green hydrogen is essential to secure the economic transition and maintain relevance in a low-carbon future.

The offshore energy sub-sector is not merely an extractive industry but a catalyst for the broader oceans economy. By synchronizing gas production with renewable integration and streamlining policy frameworks, South Africa can ensure a just and inclusive energy transition that maintains energy reliability while achieving 2045 sustainability targets.

List of the acronyms and key technical terms used in text, along with their definitions:

Industry Entities

- **CNOOC:** China National Offshore Oil Corporation, a major Chinese state-owned oil company.
- **ECP:** Energy Capital & Power, an investment-focused energy platform.
- **IEA:** International Energy Agency, an intergovernmental organisation providing energy analysis and policy recommendations.
- **IOC:** International Oil Company; large, privately-owned, and publicly traded firms (e.g., ExxonMobil, Shell).
- **NOC:** National Oil Company; state-owned entities that manage a country's natural energy resources (e.g., Saudi Aramco, Petrobras).

Units of Measurement

- **boe:** Barrels of Oil Equivalent; a unit used to combine oil and natural gas volumes into a single measure based on energy content.
- **bpd:** Barrels per day; a common measurement for the daily production or consumption of oil.
- **Mbbl:** One thousand barrels of oil (Note: some European companies use lowercase 'kb' or 'mb' to avoid confusion).
- **MMbbl:** is an abbreviation commonly used in the oil and gas industry to mean one million barrels of oil or petroleum liquids
- **Mb/d:** Million barrels per day; used to track large-scale global oil supply and demand.
- **Tcf:** Trillion cubic feet; a standard volumetric measurement for large natural gas reserves.
- **USD / US\$:** United States Dollar, the standard currency for global energy trading and investment.

Technical & Regional Terms

- **Deepwater / Ultra-deepwater:** Operations in water depths between 1,524 m and 2,286 m (deepwater) or exceeding 2,286 m (ultra-deepwater).

- **Floating Production Infrastructure:** Mobile offshore units (like drillships or semi-submersibles) used to extract and process hydrocarbons in deep water.
- **Jack-up Units:** Mobile offshore drilling rigs with retractable legs that can be lowered to the seabed, primarily used in shallow water.
- **Orange Basin:** A major offshore geological region located between Namibia and South Africa, currently a focus for high-impact exploration.
- **Stabroek Block:** A prolific offshore oil field located in Guyana's waters.

Global Market Terms

- **LNG:** Liquefied Natural Gas; natural gas cooled to a liquid state for easier and safer non-pressurised storage and transport.
- **Risk-Discount:** A reduction in price or a shift in preference applied to assets or commodities perceived to have a lower geopolitical or operational risk compared to more volatile alternatives.
- **Solar PV:** Solar Photovoltaics, a technology that converts sunlight directly into electricity using semiconductor materials.



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