Towards a South African Oceans Economy Master Plan

DRAFT Discussion Document

REPUBLIC OF SOUTH AFRICA

Department of Forestry, Fisheries and the Environment

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Draft V3.0

Glossary

ADEP	Aquaculture Development Enhancement Programme
CAF	Consultative Advisory Forum
CMT	Coastal and Marine Tourism
DBSD	Department of Small Business Development
DFFE	Department of Forestry, Fisheries and the Environment
DHESI	Department of Higher Education, Science and Innovation
DHSWS	Department of Human Settlements, Water and Sanitation
DMRE	Department of Mineral Resources and Energy
DOT	Department of Transport
DPWI	Department of Public Works and infrastructure
DTIC	Department of Trade, Industry and Competition
EEZ	Exclusive Economic Zone
ER	Exploration Right
E&P	Exploration and Production
FAO	Food and Agriculture Organisation of the United Nations
FRAP	Fishing Rights Allocation Process
GDP	Gross Domestic Product
IAC	Inter-departmental Authorisations Committee
IUU	Illegal, Unregulated and Unreported (fishing)
MTM	Marine Transport and Manufacturing
NDT	National Department of Tourism
NEMA	National Environmental Management Act
NEMBA	National Environmental Management Biodiversity Act
O&G	Offshore Oil and Gas
ONPASA	Onshore Petroleum Association of South Africa
OPASA	Offshore Petroleum Association of South Africa
PR	Production Right
SAAM	South African Automotive Master Plan
SAOGA	South African Oil and Gas Alliance
SEIA	Socio Economic Impact Assessment
SHD	Small Harbours Development
TCF	Trillion (Standard) Cubic Feet
TCP	Technical Cooperation Permit
TNPA	Transnet National Ports Authority
SAIMI	South African International Maritime Institute
SSA	Sub-Saharan Africa

1. INTRODUCTION

South Africa boasts a long coastline of approximately 3900 kilometres which includes mainland South Africa and Prince Edward Islands which comprise of Marion Island and Prince Edward Island in the Southern Ocean. Its vast ocean area (Exclusive Economic Zone) of some 1.5 million square kilometres (compared to the land-mass of approximately 1.2 million square kilometres) and the fact that South Africa is uniquely surrounded by three oceans, the Atlantic Ocean in the West, the Southern Ocean in the South and the Indian Ocean in the East which is rich in biodiversity and other natural resources, provides opportunities for sustainable utilisation and economic growth.

As part of the development of an Oceans Policy, an economic study was commissioned in 2010 to determine the contribution of the ocean to the South African Economy, in terms of Gross Domestic Product (GDP) and Jobs. This study focused on the monetary value of the structured oceans economy and did not include the valuation of the ecological and natural capital.

The South African Maritime sector has been existence for many decades and whilst there is recognition for its contribution to the overall Oceans Economy, some of the sub-sectors remained nascent and under-explored.

In promoting the Oceans Economy as a sector for sustained economic growth, it is important to address the multitude of constraints that impede growth and development, including transformation and implementing a set of interventions to advance the sector.

From the economic analysis of the total ocean sectors (in 2010), it was estimated that the Oceans Economy could contribute between R129 to R177 billion by 2033 and create between 800 000 to 1 million jobs.

In an attempt to stimulate the Oceans Economy, the South African Government initiated Operation Phakisa in 2014 as a results-driven approach with clear plans and targets, based on the Big Fast Results (BFR) methodology which was successfully implemented in the Economic Transformation of the Malaysian Economy. Whilst the implementation of the detailed plans of Operation Phakisa has had varying successes and impacts, further work is required in some sub-sectors.

The development of the Oceans Economy Master Plan builds on the foundation of the initiatives of Operation Phakisa and expands the scope to sub-sectors that had not been dealt with during this process. The Oceans Economy sector is quite complex and will be dealt with at sub-sector level as these sub-sectors are quite unique with its own dynamics and opportunities.

The focus will thus be on the broad sub-sectors and include:

- Marine Transport and Manufacturing;
- Offshore Oil and Gas;
- Aquaculture and Fisheries;
- Coastal and Marine Tourism; and
- Small Harbours Development.

2. ECONOMIC ANALYSIS OF OCEAN SECTORS

The Total Oceans Economy Sector Economic Analysis has indicated a steady improvement since 2010 with GDP contribution remaining at 4.4% i.e. R110 billion, growing to 4.6%, i.e. R125 billion by 2014 and reducing to 4.4% in 2015, i.e. R128 billion. Similarly, the number of jobs created in the total ocean sectors increased from 316 000 in 2010, to 413 356 jobs in 2014 and 425 525 jobs in 2015. This analysis was conducted with specific assumptions of growth potential and a time when the economy had a particular growth trajectory. The percentage decrease in contribution to the Gross Domestic Product (GDP) from 2010 to 2015 can be attributed to: Depressed global and local economic climate; Global trade growth and commodity prices that are under downward pressure; Low oil prices impacting negatively on the oil and gas sector; a slowdown in investments especially from the private sector; reduced demand; and reduced investor appetite. From the recent economic analysis, the total ocean sectors contributed R127.8 billion to GDP (i.e. 4.2%) in 2018 and created 518 403 jobs. The analysis for 2019 indicates R130.370 billion (4.5%) contribution to GDP and 530 207 jobs. An analysis is under way to determine the more recent contributions in terms of GDP and jobs, taking into the current economic climate.

3. PROCESS AND METHODOLOGY

The development of this Discussion Document "*Towards a South African Oceans Economy Master Plan*" was guided by the Master Plan Framework as outlined by the Department of Trade, Industry and Competition (DTIC) and is informed by the process to develop a South African Automotive Master Plan (SAAM). The development of the Oceans Economy Master Plan entailed dedicated Working Sessions with the respective Stakeholders. At this stage, industry stakeholders – industry bodies and associations have been consulted. Further consultations with Labour, Academics and Non-Governmental Organisations will commence to elicit input on the draft Sub-sector Master Plans as part of the broader Oceans Economy Master Plan.

Whilst the process of further engagements with the stakeholders in the respective Sub-sectors continue as part of the overall Oceans Economy Master Plan, three broad thrusts have been identified in order to advance the Sub-sectors:
These thrusts, with dedicated timeframes for delivery, include the following:

- Stabilisation (0 – 6 months);
- Revival (up to 18 months) ; and
- Growth (beyond 18 months).

The draft document at this stage does not include Sub-sectors such as the Small Harbours Development and Coastal and Marine Tourism. These will be included as the document is further enhanced.

The details for each of the Sub-sectors are outlined below.

4. MARINE TRANSPORT AND MANUFACTURING

Context and Overview

The Marine Transport and Manufacturing (MTM) industry comprises of marine transport (including cargo handling, national registry and flagging) and marine manufacturing (including maritime vessel building, rig and ship repair and offshore oil and gas (O&G) services). South Africa can leverage its strategic location, infrastructure and skills base to accelerate the growth of the MTM Sub-sector. South Africa has an opportunity to build on its managed and controlled port system to develop the MTM industry. Marine Transport and Manufacturing has the potential to grow into a significant driver for the South African economy (Figure 1).

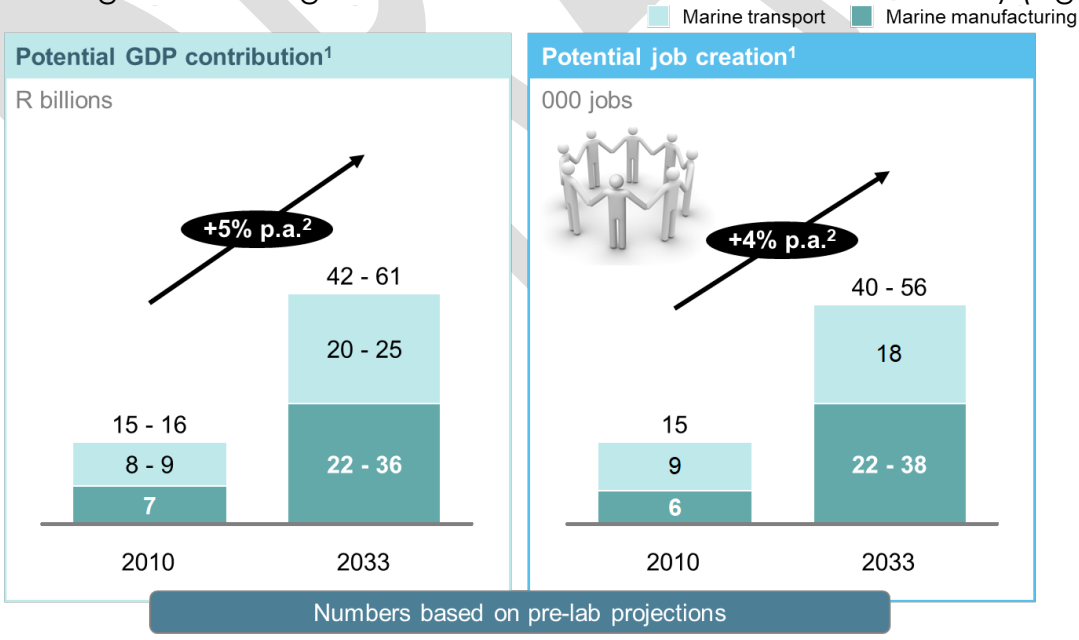

Figure 1: The MTM sector's potential GDP and job contributions (up to 2033) and compared with other growing sectors

With regard to marine transport, cargo growth is projected to continue to drive growth, although it is a mature market and therefore difficult to get breakthrough growth in the maritime economy. South Africa is ideally positioned to serve East-West cargo traffic and the African offshore oil and gas industry, given the regional potential. A National registry for local ownership of shipping vessels is an area of significant growth. South Africa does not have capacity to carry its own trade to market, move its own trade around the coast and support its own offshore strategic energy production installations. The global market for shipping freight is dominated by a limited number of very established players.

Ship and oil rig repair and refurbishment provide an opportunity for growing marine manufacturing. At the time of analysis, of the 80 rigs estimated to be in range of Western Cape, only 4 rigs (~5%) are serviced a year – showing significant potential for growth. The boat-building (including yachts) sub-sector will also drive marine manufacturing growth. South Africa has the capabilities for a wide range of services e.g. structural, mechanical and electronic services in dry and wet docks – these include hull cleaning, engine repairs, large vessel dry dock facilities, electronic system repairs and offshore oil and gas vessel/rig repair. However, South Africa currently only captures nearly 1% of the global market of repair and refurbishment. There is significant potential to make use of South Africa's strategic location, competitive cost of labour and existing skill base.

It was estimated that cargo handling could contribute between R16 - R19 billion to GDP and create 14 000 direct jobs by 2033, whilst sea and coastal water transport, in the absence of a nation ships registry, could contribute R2 billion to GDP and create 3 000 direct jobs, with supporting transport activities contributing between R2 - R4 billion and creating 1 000 direct jobs.

South Africa does not have capacity to carry its own trade to market, move its own trade around the coast, and support its own offshore strategic energy production installations as the number of ships on the South African Ships Registry are limited – currently there are only four. The global market for shipping freight is also dominated by a limited number of very established players. South Africa is legally allowed to transport 40-60% of international trade entering and exiting its ports using SA flagged ships.

Ship and Rig Repair

Stabilisation (0-6 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Industry Contribution - Impact
Infrastructure and Equipment: • Ship repair facilities in state of disrepair - lack of	• Immediate engagement	• Transnet / TNPA • Ship repair industry	• Industry will create and sustain jobs.

maintenance / outdated infrastructure. • Port facilities inadequate – lack of dedicated purpose-built facilities to serve needs of industry; lack of enough drydocks. • Equipment at the ports are inefficient – Non-availability of cranes; synchro lifts non-functional; caissons; capstans. • Procurement timeframes within TNPA extremely long causing implementation delays especially for equipment. • Lack of docking/berth facilities for local rig and ship repair projects. • TNPA projects on facilities not progressing – implementation delays. • Rig projects are not prioritised - Have to take a backseat when it comes to allocating space compared to competing industries.	with CEO of TNPA. • Ship repair facilities to be upgraded. • Private sector to be allowed to invest in infrastructure and operate accordingly. • Engagement with TNPA on drydock facilities in Ports of Cape Town, Durban, Saldanha Bay, Richards Bay. (Sturrock; Robinson). • Require a Floating Dock in Port of Cape Town. • TNPA commitment required on dedicated facilities for rig repairs.		• Attraction of clients and investments. • Industry willingness to invest in cranes. • Industry willingness to invest in a floating dock. • Reduction of costs to industry which will result in increased investments and more jobs.
Tariffs and Fees: • High rental/tariff costs. • Short tenure of leases for marine manufacturing. • High docking fees for ship and rig repair projects - diminishes competitiveness w.r.t. global players.	• Review of Port Tariff Structure – engagement on methodology and model (formulae). • Review of leases viz-a-viz investments.	• Ports Regulator. • TNPA.	
Skills and Capacity: • Up-skilling and improving of skills, especially in the oil and gas sub-sector.	• Continue to do gap analysis re global skills requirements, as per SAOGA and partners initiative.		
Health and Safety: • Health and Safety Awareness inadequate.	• Awareness raising and communication.	• TNPA. • Ship repair industry.	• Positive impact on workers safety in the industry.

5. OFFSHORE OIL AND GAS

Context and Overview

South Africa's oil and gas sector, although in its early development phase compared to other African countries, has the potential to create large value to the country in the long run. Developing an oil and gas industry takes decades – for example, in Nigeria it took 15-20 years from the moment of licensing until first production. Similarly in Norway, from the time the initial drilling commenced in 1966, production only started in 1971, after an enormous discovery in 1969. By 2012, its petroleum product exports amounted to approximately $95 billion per annum.

South Africa has possible resources of ~9 billion barrels oil (equivalent to 40 years of South African oil consumption) and 60 TCF (Trillion Cubic Feet), which is an 11 billion barrels oil equivalent of gas (equivalent to 375 years of South African gas consumption), but the uncertainty is large. It was estimated that South Africa imports approximately 66% of its crude oil requirements, mainly from Saudi Arabia, Iran, Nigeria and Angola.

Oil and Gas exploration requires significant investments, particularly in South Africa's deep water offshore environment where a single exploration well can cost over $150 million. The petroleum exploration and production activities in South Africa are highlighted in the map (Figure 2).

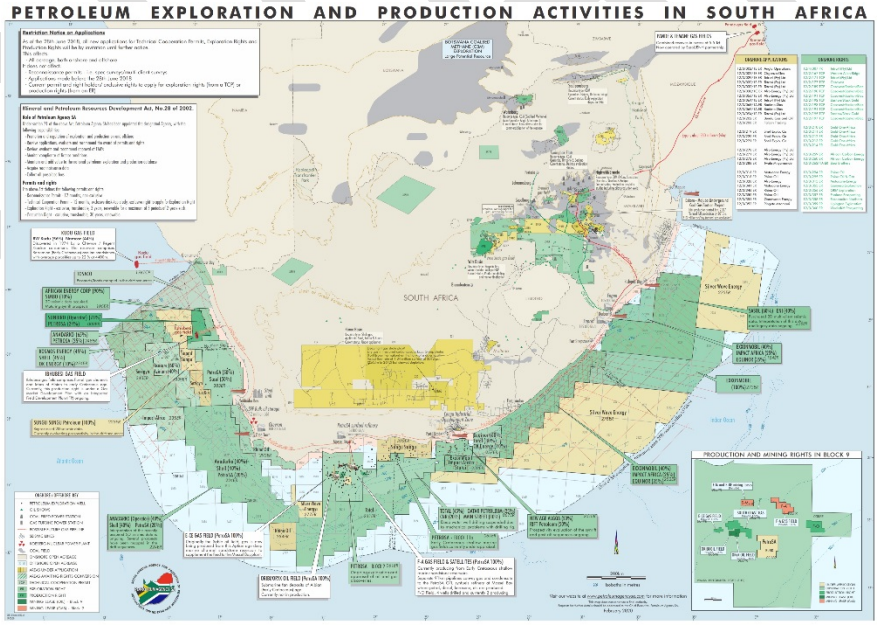

Figure 2: Petroleum Exploration and Production Activities in South Africa

In 2014, an aspirational target of 30 exploration wells in the next 10 years was proposed, for which investments in the range of $3-5 billion are needed. Given that exploration success rates are below 15%, investors see these opportunities as

risky. Assuming South Africa could achieve production levels of 370 thousand barrels of oil and gas per day (of which the likelihood is hard to assess at this stage), this would mean up to 130 000 jobs are created with annual uplift to GDP of $2.2 billion, while reducing the dependence on expensive oil and gas imports. Developing the upstream oil and gas sector could bring significant value to the country (Figure 3). Furthermore, the development of gas could increase South Africa's independence and could help building downstream industries.

The recent discovery in 2019 of gas condensates by Total in the Outeniqua Basin off the Southern coast of South Africa was estimated at around 1 billion barrels of total resources of gas and condensate and it will significantly augment South Africa's gas capacity.

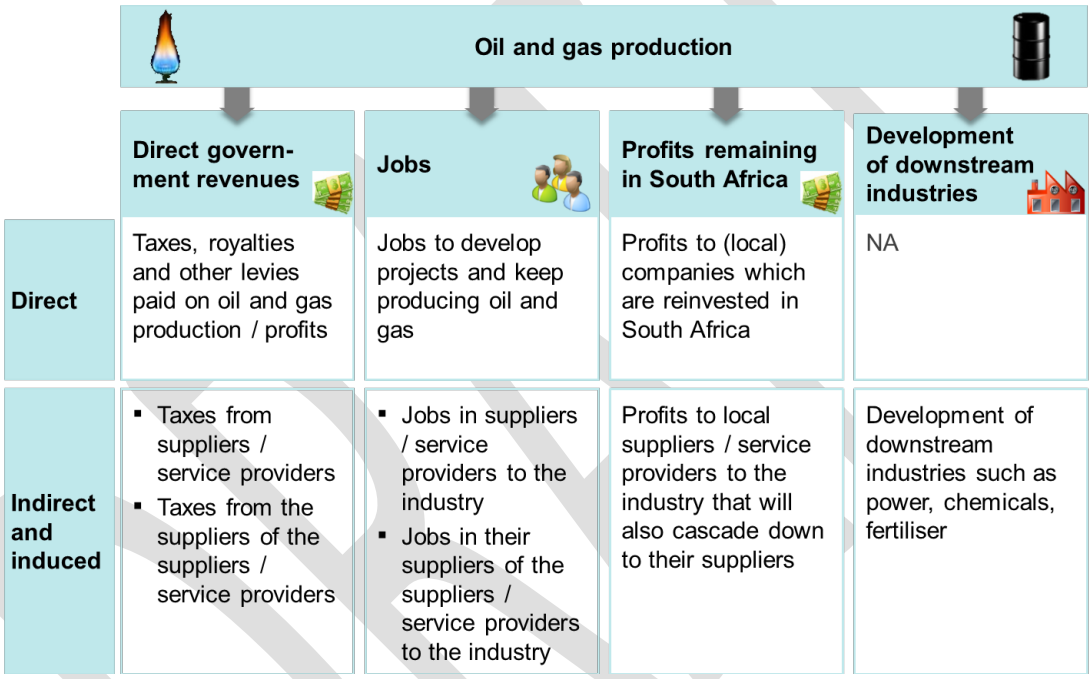

Figure 3: Significant direct and indirect value of developing the upstream oil and gas sector

Stabilisation (Upstream Oil and Gas) (0-6 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Industry Contribution - Impact
Legislation and Policy: • Lack of legislative clarity – uncertain legislative environment. • Complex regulatory legislative environment – over-regulated framework not investor-friendly.	• Accelerate the finalisation of the Upstream Oil and Gas legislation, without softening on quality, clarity and certainty considerations.	• DMRE	• Industry investment in a more certain environment. • Exploration activities to continue.

• Delays in finalisation of the Upstream Petroleum Development Bill. • Unclear Ministerial discretion and its implications on costs. • High cost and high risk environment. • No provision for transitional arrangements in the Draft Upstream Petroleum Development Bill (for exploration licences coming to an end). • Low levels of fiscal stability.	• The state, in consultation with Industry to create an unambiguous and clear legal framework. • Ministerial discretion to be defined in detail in the legislation. • Reduction of regulatory costs to align with the state of maturity of the South African oil and gas exploration industry. • State interest and BEE participation to be aligned with the maturity of the industry. • Resource-rental fee and production bonus costs to be made available to the industry for comment. • Clarity on 100% Black-owned blocks required.	• DMRE / Oil and Gas Industry • DMRE • DMRE • DMRE • DMRE • DMRE	
• Piecemeal approach to developing the offshore and onshore exploration legal frameworks.	• Implementation of a more comprehensive and differentiated legal framework for offshore and onshore exploration.	• DMRE	
• Skills gap prevailing (better than other similar oil and gas countries in the infancy stages, but still gaps).	• Continue to do gap analysis re global skills requirements, as per SAOGA and partners initiative.	• DMRE/ SAIMI/ • Oil and Gas Industry	

	• Develop bridging training and upskilling courses.		
• Health and Safety Awareness not adequate.	• Health and Safety Protocols to be fully implemented, communicated and enforced.	• DMRE / Oil and Gas Industry	
Institutional Arrangements: • Ineffective institutional arrangements for managing exploration and production.	• Improve functionality of One-Stop-Shop.	• DMRE / PASA	
• Inadequate communication and red tape.	• Creation of a One-Stop Information Platform.	• DMRE / PASA	
• Momentum of Phakisa initiatives lagging.	• Inter Working Group engagement and consolidation of Working Groups reporting.	• DMRE / Oil and Gas Industry	
Exploration & Appraisal: • Dry hole or non-commercial discovery. • Industrial accidents / environmental degradation.			
Development: • Lower recoverable reserves than expected. • Project not commercially viable. • Industrial accidents/ environmental degradation.			
Production: • Production performance lower than expected. • Security (Piracy/Politics). • Industrial accidents/ environmental degradation.			
Abandonment: • Environmental degradation.			

6. AQUACULTURE

Context and Overview

Globally aquaculture is an important source of food security and is the fastest growing food production sector. The annual growth rate was 5.8% during the period 2001–2016. Global aquaculture production (including aquatic plants) now complements fisheries almost on an even basis at 80 million tons, valued at US$231.6 Billion in 2016. In recent years the production of aquaculture products has overtaken the level of production in the wild capture fishing sector. One of the reasons cited is a shift in focus by countries toward aquaculture in an attempt to mitigate the natural risks associated with the sustainability of the fish resources and the increased demand for protein products across the globe. The total aquaculture production is concentrated in Asia with China producing 62% of the total volumes alone.

In Africa aquaculture production accounted for 17-18% of total fish production in Africa and Sub-Saharan Africa's contribution is approximately 0.7%. From the 2016 assessments, 19.3 million people are engaged in aquaculture globally with 304 000 in Africa. Approximately 40 of 49 countries in Sub-Saharan Africa (SSA) produced a total of 588 000 tonnes of fish in 2016 according to the Food and Agriculture Organisation (FAO). This comprises mainly small-scale production of tilapia and catfish, with the majority thereof formal-fed and delivered to domestic markets. Nigeria was the largest producer of fish in SSA, with 307 000 tonnes in 2016. There is significant potential to expand both freshwater and marine aquaculture in SSA, particularly through large commercial aquaculture. Only 3 countries, Madagascar, Senegal and South Africa recorded marine aquaculture production in excess of 1 000 tonnes in 2016.

The South African Aquaculture Sub-sector is quite diverse in both the farming methods used and species farmed. Broadly the sector comprises of 2 (two) culture environments with associated species:

- Marine: Abalone, Mussels, Oysters, Seaweeds, Finfish.
- Fresh Water: Trout, Tilapia, Catfish, Ornamentals and Marron.

The South African aquaculture industry has expanded substantially over the recent years, with production levels increasing by almost 75% since 2013 to approximately 7 000 tons (Figure 4).

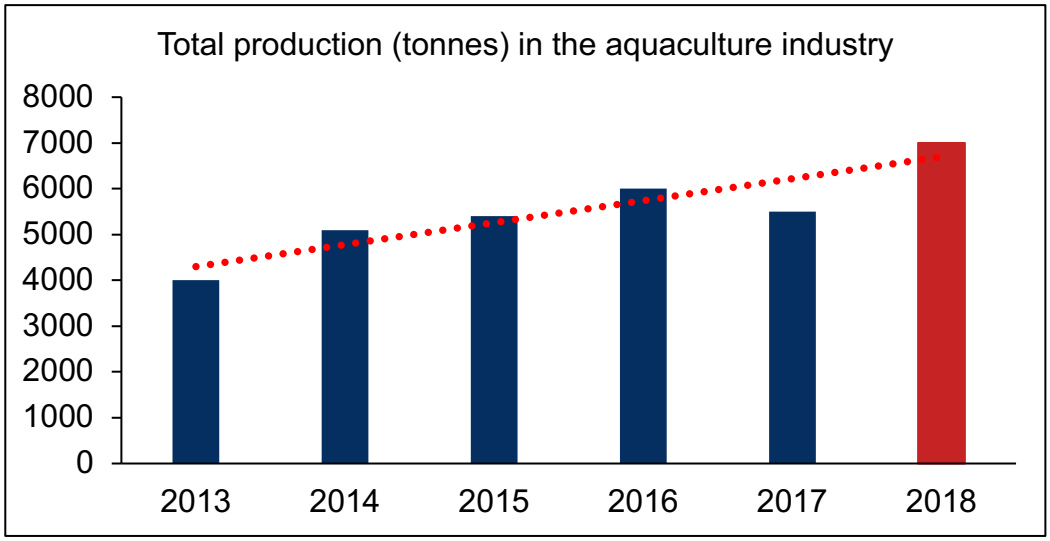

Figure 4: Total production (tonnes) in South African aquaculture industry

Abalone, mussels and the trout sub-sectors remain the most valuable, contributing just over 93% of the total value of the industry in 2017 (Figure 5). The total sales value across the aquaculture sub-sector in 2018 was approximately R1 billion excluding additional value generated through leisure and tourism, e.g. trout farming.

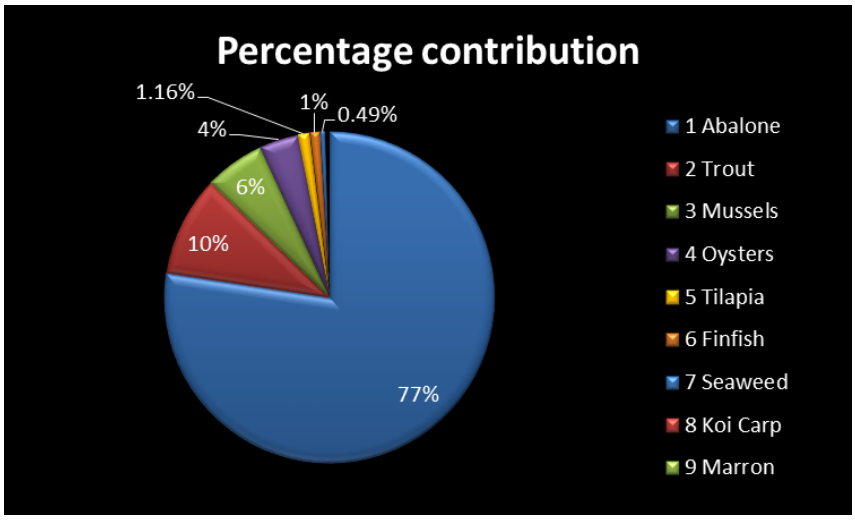

Figure 5: Percentage contribution of sub-sectors to total South African aquaculture production

As of 2018 there were approximately 6 500 permanent jobs in total across the aquaculture value chain (both direct and indirect). Over 90% of employees across the aquaculture industry are HDIs, leading to a direct employment of approximately 3 000 historically disadvantaged individuals (HDI). Eighty percent (80%) employed are unskilled or semi-skilled, one third are women and around 45% are youth. The aquaculture sub-sector demonstrates reasonable transformation with 33% of legally exported abalone owned by historically disadvantaged individuals (HDI) and of this, 8% is HDI women owned. The creation of a more conducive business environment will contribute to increased transformation across

the sector. Despite the small size of the aquaculture 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. The sector is capital intensive and has significantly high operating costs, placing particular importance on scale and access to lucrative markets in order to achieve a suitable return on investment. Currently farming and processing facilities across the sector are valued at approximately R3.2 billion. Local areas for aquaculture growth had been identified and is highlighted in Figure 6.

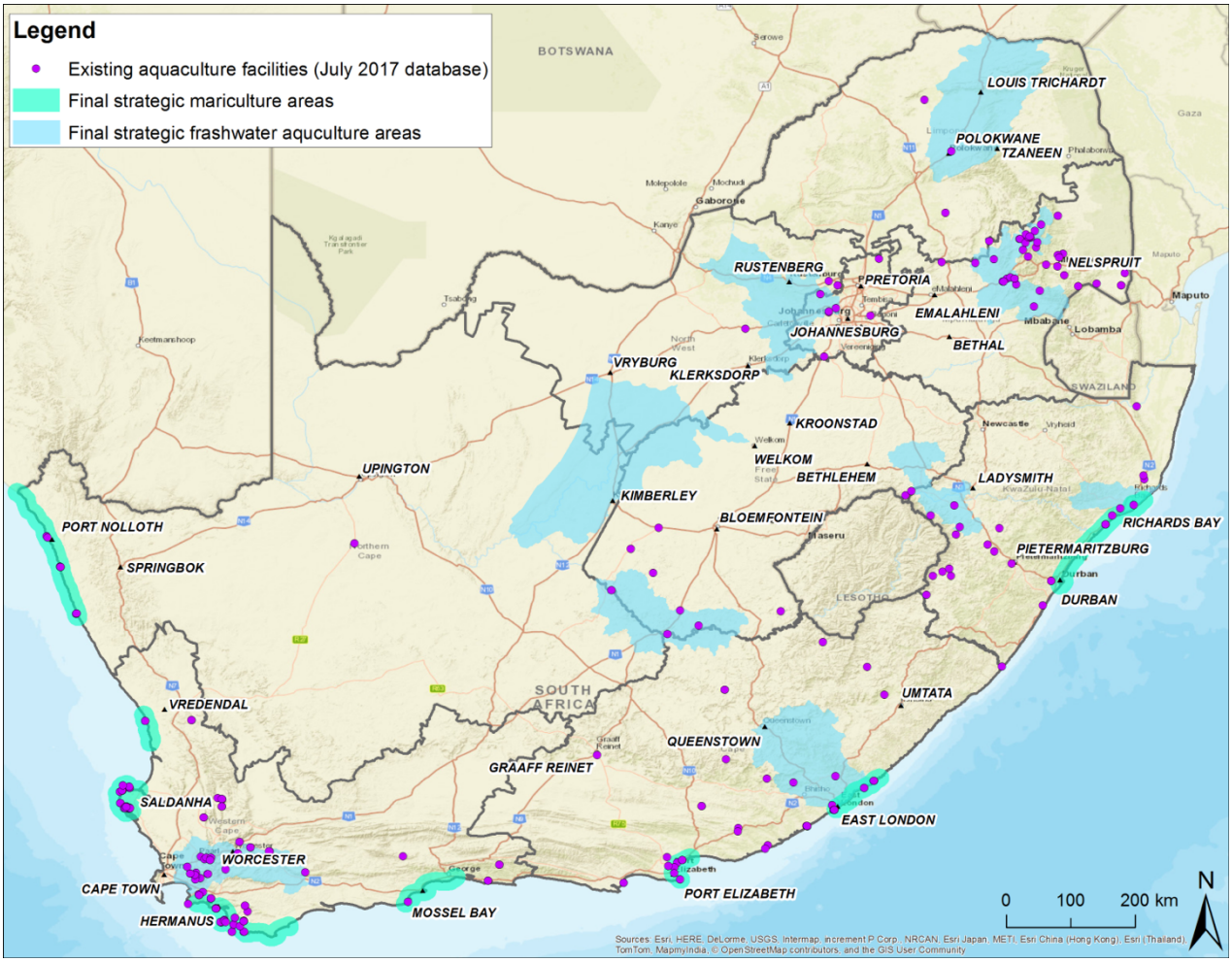

Figure 6: Local Areas for Aquaculture Growth

Growth Projections over the next ten (10) years have been estimated for the aquaculture sector and these are reflected in Figure 7.

Production (tons)	Current	6months	18months	5 years	10 years
Abalone	1321	1412	2445	3395	5545
Mussels/Oysters	3100	5600	6200	10200	15200
Trout	950	950	1200	1500	2000
Finfish (sea trout)	50	50	1000	4000	8000
Tilapia	213	283	991	1507	2900
Catfish	60	60	120	180	500
Seaweed	2000	2000	2000	3000	5000
TOTAL (excl seaweed)	5694	8355	11956	20782	34145
TOTAL (inc seaweed)	7694	10355	13956	23782	39145

Employment (on farm)	6months	18months	5 years	10 years
Abalone	1700	2200.5	3055.5	4990.5
M finfish	75	300	1200	2400
Tilapia	200	220	240	290
Trout	200	200	250	300
Catfish	100	100	120	150
Bivalve	840	930	1530	2280
Other Maron, ornamentals, seaweed)	135	150	150	150
TOTAL on farm	**3250**	**3950.5**	**6395.5**	**10410.5**
TOTAL (incl value chain)	**6500**	**7901**	**12791**	**20821**

Value	Price estimates per kg	6 months	18 months	5 years	10 years
Abalone	R450.00	R 635 400 000	R 1 100 250 000	R1 527 750 000	R 2 495 250 000
Mussels/Oysters	R25.00	R 140 000 000	R 155 000 000	R 255 000 000	R 380 000 000
Trout	R60.00	R 57 000 000	R 72 000 000	R 90 000 000	R 120 000 000
Finfish (sea trout)	R75.00	R 3 750 000	R 75 000 000	R 300 000 000	R 600 000 000
Tilapia	R40.00	R 11 320 000	R 39 640 000	R 60 280 000	R 116 000 000
Catfish	R30.00	R 1 800 000	R 3 600 000	R 5 400 000	R 15 000 000
Seaweed	R5.00	R 10 000 000	R 10 000 000	R 15 000 000	R 25 000 000
TOTAL		**R 859 270 000**	**R 1 455 490 000**	**R 2 253 430 000**	**R 3 751 250 000**

Figure 7: Estimate growth projections for the Aquaculture Sub-sector over the next ten (10) years.

Stabilisation (0-6 months)

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Industry Contribution - Impact
Legislation and Policy: • There is a high administrative burden across the sector with a plethora of regulations across different levels of the value chain. • Current legislation places a significant administrative burden on existing farming activities.	• Further engagements with industry on the Aquaculture Development Bill.	• DFFE	• Investment-friendly environment for Investments by industry. • Industry expansion and increase in production and job creation. • More diversified markets. • Streamlined authorisations and permitting processes to facilitate which contribute to marketing and job creation.
Administration and Authorisations: • Sluggish permitting process due to multiple stakeholder departments. • Plethora of permits are restrictive (e.g. farming; transport). • Cost of permitting.	• Revigorate the Inter-departmental Authorisations Committee (IAC) and review of business processes for authorisations. • Review of the permitting requirements. • Introduction of a centralised permit/licensing system which decreases administrative costs.	• DFFE • Other Government departments • DFFE	
Markets, Growth and Security: • Slow economic growth domestically and internationally has added to the risks associated with farming in terms of market demand and price. • Market participants rely on costly private security service providers to combat stock theft due to a spillover from poaching and increased	• Engagement with the DTIC on increased support and favourable trade agreements for aquaculture products to main markets is paramount to alleviate market costs associated	• DFFE • DTIC	

criminality in rural farming areas. • Lack of diversification in terms of market access and products developed which puts the sector at significant risk to fluctuations in market demand. • Under-developed supply chain. • Local markets limited. • Impact of COVID-19 on markets.	with tariff and trade barriers. • To diversify markets Government must align and facilitate interaction between stakeholders to address the immediate shortfalls in compliance infrastructure restricting trade. Once identified Government must develop a plan and set aside sufficient funding to ensure the upgrading and protection of this infrastructure. • Initiate and maintain effective monitoring and research programs as per international standards. • Investigate potential of third parties buying stock from abalone farms to assist with cash flow. • Increase export market diversity which requires passing EU audit and standards and prioritising the steps that need to be undertaken in that regard by laboratories.		

	• Develop security and poaching security model for abalone ranching operations. • Investigate general exemption with conditions to make it easier to sell abalone on the local market. • Market aquaculture products and conduct awareness to increase local market consumption. • Government procurement to support to access catering markets (correctional facilities, hospitals, defence, schools, and old age homes).		
Supporting infrastructure and enablers: • Significant operating costs including electricity, manpower, feed and services. • Limited or lack of good quality feed. • Limited State-sponsored funds for aquaculture ventures.	• Support to counter high operating costs by providing additional relief from energy providers (Eskom and NERSA) to allow sustainable and cheaper generation of energy. Government should help with this engagement given the positioning of	• DFFE • Aquaculture Industry • DTIC • DPWI	

	these sector in Operation Phakisa. • Funding support- soft loans and other forms of support. • Identify, package and circulate information to industry on current financial support mechanisms available. • Motivate for payment holiday for aquaculture farms from TNPA and DPWI (Farms are engaging with their respective municipalities regarding deferred payments to municipality). • Liaise with agricultural departments in provinces to establish need to support small scale projects with feed for at least one month to reduce risk of closures (Tilapia, Catfish, Trout). • Assist industry to engage with the Department of Transport, including airlines to assist with airfreight logistics for exported product (trout ova, oysters and abalone) to the East.		

	• Investigate exemptions to allow farms to release excess spat in front of their farms for public good (stock-enhancement) (Abalone). • Continue providing extension/advisory support to small scale farms (Tilapia; Catfish). • Ensure access to mining areas for Abalone ranching activities along the Northern Cape coastline. • Ensure continued coastal water monitoring to ensure early warning of any potential human health risks (Oysters; Mussels; Abalone). • Engage with DTIC (ADEP) to review the disbursement criteria for ADEP, especially in regards to financial performance.		
Skills development and Labour: • Skilled labour requiring very high salaries and is likely to be poached by larger commercial entities.	• Upskilling a bigger pool of candidates.	• DFFE • SAIMI • Aquaculture Industry	

Revival (up to 18 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Economic Beneficiation
Legislation and Policy: • Legislative environment not finalised. • Restrictive legislation constrains the expansion of current aquaculture operations, including NEMA and NEMBA.	• Finalisation of the Aquaculture Development Bill. • Review of NEMBA and NEMA legislation in particular related to the farming of economically important species. In particular with reference to invasive or alien categorisation of trout (NEMBA) and low economic production threshold that trigger NEMA. • Create Policy certainty and reduce red tape: - Centralise and streamline existing legislation where feasible (Implement the Strategic Environmental assessment outcomes, Intergovernmental Authorisation Committee, Aquaculture Development Bill, etc.). - Improve operational	• DFFE	• Investments by industry. • 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 of R1 Billion. • Stability of the sector and policy certainty will also facilitate growth in the industry through increased GDP of R100 million per annum and growth of 600 jobs per annum. • 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 R2 billion per annum. • Access to poached volumes will also have the knock-on effect of increasing employment.

	permitting efficiency and streamline where possible.		
Markets, Growth and Security: • Markets pressures providing low margins for investors and limit expansion, opportunities. • Resource security under threat due to spill-over from poaching and increased criminality in rural farming areas. • Market volatility in concentrated markets such as Asia limits opportunities for sector revival.	• Need for greater collaboration between Government and industry players to improve security in rural farming areas. Support from DEFF Compliance in preventing theft of farmed and ranched abalone should be prioritised. • Investigate informal markets for freshwater products.	• DFFE • Aquaculture Industry • DTIC	
Supporting infrastructure and enablers: • Degradation of community infrastructure creates significant hurdles to the development of aquaculture farms (including degradation of power and water grids and roads). • High operating costs (energy and feed providing low margins for investors and limit expansion, opportunities.	• Increased focus on repairing and ensuring the reliability of quality infrastructure. • Repair of key infrastructure such as power grids is key to the medium to long-term success of the sector. • There is a need for well-structured planning with local municipalities and Government Departments focused at the upgrading of road	• DFFE • Local Authorities • Aquaculture Industry	

	infrastructure and transport aligned with increased production needs. • Support and incentives that counter high operating costs and encourage growth. • Explore development funding support or bridging finance with low interest rates to keep development programmes running.		
• Limited research support and infrastructure.	• Revitalisation and upgrade of existing government Hatcheries and Research Centres (Trout; Tilapia); Catfish). • Investigate and pilot abalone cage culture operations with coastal communities buy-in and ownership. • Invest in infrastructure development for aquaculture sector e.g. aquaculture zones, hatcheries and research centres. • Research and production of low cost feed for the finfish sector at Gariep.	• DFFE • DSI • ARC • DFFE together with Free State Department of Agriculture and	

	• Technology development and piloting of new indigenous species with high value (e.g. Sea Urchins)	Rural Development.	
• Limited support, administration burden and high costs (permitting; operational, etc.).	• Reduce administrative cost of permitting through implementation of an electronic permitting system. • Provide security of tenure for investment by renewing existing DPWI leases identified for coastal aquaculture initiatives, as well as leases required for land based operations of existing sea based farms (oysters/mussels). • Reduce operational cost through incentives, reduced import tariffs on feed inputs, feed subsidies, and use of alternative energy. This includes focused research by various entities guided by DFFE. • Implement dedicated small scale aquaculture support programme in cluster approach	• DFFE • DPWI • DTIC	

	with province, vets, scientists and training. • Roll out further abalone ranching operations with coastal community buy-in and ownership.		

Growth (beyond 18 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Economic Beneficiation
Legislation and Policy: • Rights allocation process under the current MLRA and proposed Aquaculture Bill incorporating freshwater aquaculture, is seen as an inhibitor to growth and future investment in the sector.	• Implementation of policy targeted towards enabling growth based on social economic impact assessments as opposed to further regulatory control. • Policy focused on the unique characteristics of the aquaculture sector acknowledging its differences relative to the fishing sector and aligning it with agriculture. -	• DFFE	• Increased presence in high-value export markets (EU and US) leading to increased value of the sector. This will stimulate growth of the sector 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 (China). • 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
• SA has a limited number of suitable sites. - Freshwater: limited freshwater bodies or reserves. - Marine: competition for high value coastal properties with other sectors and limited	• Financial aid to market participants. This aid is necessary in order to limit the high costs associated with entry.	• DFFE • Other Government departments. • Aquaculture Industry	

protected bays for sea-based farming. • SA has limited environmental conditions that fit important marketable species and are thus limited to the key anchor sectors.			opportunities and investment. • Lower operating costs will reduce the entry barriers of the sector and allow for increased inclusivity and transformation.
• High capital costs associated with required economies of scale to penetrate lucrative international markets.	• Additional financial aid and/or subsidies from Government to limit operating costs.	• DFFE • DDTIC	
• Few research and development facilities for the development of aquaculture technologies and commercially important species.	• Budget allocation to Research & Development targeting new technologies that assist farmers with production.	• DFFE • DHESI • Aquaculture Industry	

7. FISHERIES

Context and Overview

Global wild capture production has been relatively static since 1980s, with most growth in the supply of fish for human consumption stemming from the aquaculture sector (Figure 7).

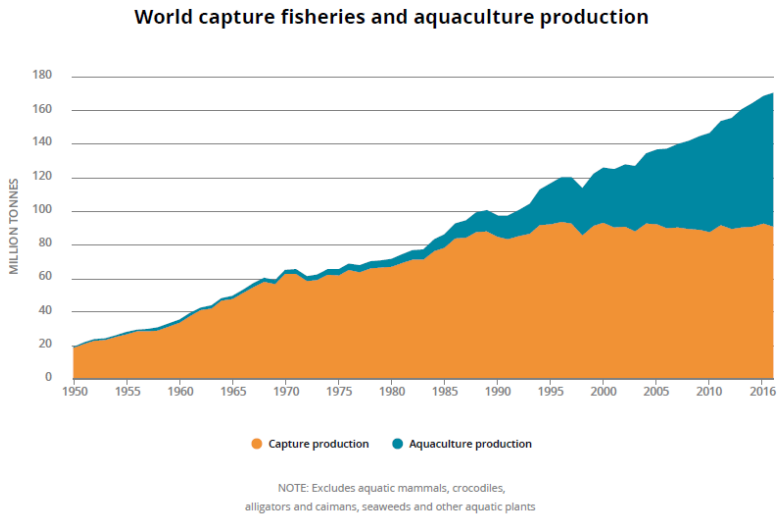

Figure 7: World capture fisheries and aquaculture production

In 2016 total wild capture fisheries which includes both marine and inland) was estimated at approximately 90.9 million tonnes. The Asian market (mostly China), is the largest global market for both fish production, contributing just over 55% of total production across the fishing sector. The fraction of fish stocks that are within biologically sustainable levels has exhibited a decreasing trend, from 90.0 percent in 1974 to 66.9 percent in 2015. This is exacerbated by an increase in Illegal, Unreported and Unregulated (IUU) fishing. The comparative total fish production is highlighted in Figure 8.

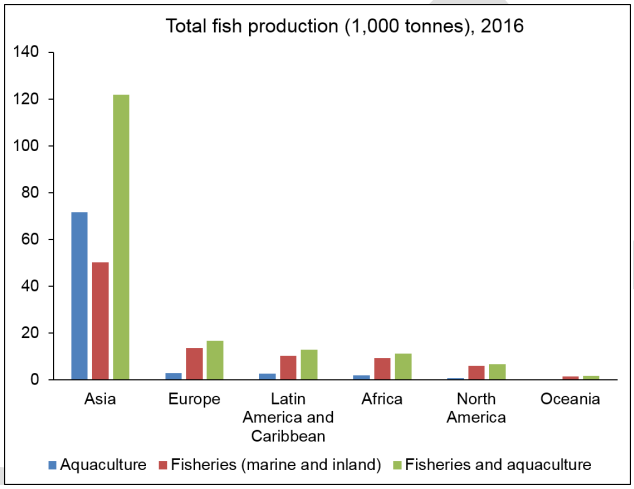

Figure 8: Total Fish Production (1 000 tonnes); 2016

Africa accounts for approximately 10.2% of global production with South Africa contributing approximately 0.7% of the global volume. The current sales value of the South African fishing sector is estimated at R13.3 billion.

The South African fishing sector is well-established, ranging from the highly industrialised fishing fleet to the more accessible small-scale fisheries, subsistence fisheries and recreational fisheries and remains a significant contributor to food security and the economy. The Commercial fishing sector (of which the Hake Deep-Sea and Small Pelagic fisheries comprise approximately 75% in value and contributes substantially to the socio-economic framework of the South African economy. The fishing industry transformation profile entails approximately 75% black-ownership (up from 35% in 2004) and BBBEE- Level 2.

The South African fishing industry has a R14.3 billion annual socio-economic contribution and employ in excess of 60 000 people (directly and indirectly). The sector supports employment of unskilled labour such as stewards, packers at the processing plants and crew on vessels. Additionally the sector relies on individuals with high skill levels in order to remain globally competitive. Skilled positions, often trained in-house, include vessel captains, engineers, food scientists and procurement specialists. Furthermore, it supports approximately 2 000 SMMEs across South Africa with spend greater than R1 billion per annum. The fishing fleet and processing facilities are valued at approximately R13.5 billion. The Small-Scale

fishing sectors, including sectors like Line-fish, West Coast Rock-Lobster and Mussels support less capital intensive small-scale and/or artisanal fishers.

Stabilisation (0-6 months)

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Industry Contribution - Impact
Legislation, Policy and Fishing Rights: • Policy uncertainty w.r.t. the Fishing Rights Allocation Process (FRAP). • Fragmentation, i.e. increasing the number of rights holders in the industry and dividing the total fishing rights among these rights holders, of the industry through the current FRAP process compromises the sustainability of business operations which are vertically integrated and capital intensive. • Fragmentation limits the ability of businesses to maximise value creation across the sector and threatens the functionality and profitability of these operations. • Lack of clarity on new entrants by sector and potential industry reconfiguration resulting in industry paralysis. • Transparent process of Fishing Rights Allocations: - Methodology for inclusion of rights holders in the respective sub-sectors; - Criteria such a transformation, past investment and employment. • Lack of clarity on Government's objectives in the sector in relation to transformation in the	• Provision of Policy certainty in respect of FRAP, informed by: - Independent socio-economic studies, taking into account the unique characteristic of each fishing sub-sector; - Sound economic analysis; - Transparent process. • Provision of the following aspects in respect of FRAP: - Clear timeline on the completion of the FRAP; - Details on the process and prioritisation of its completion; • A transparent framework of the key criteria against which applicants will be graded; • Clarity on transformation, investment and employment metrics.	• DFFE	• Certainty and increased investment and growth of the sector. • Sustaining the number of jobs in the fishing sub-sector. • Maintaining support to current SMMEs. • Finalisation of the FRAP process will provide certainty over the medium to long-term view of the fishing sector and will allow market participants to make informed investment decisions. • Sustainable management of fishing resources which will lead to more investment by fishing industry. • Improved administrative procedures will facilitate and stabilise fishing industry.

industry, i.e. failure of current policy framework to recognise and reward transformed entities in the industry and inadequate punitive action against those entities that have not met transformation expectations. • Fragmented legislation that regulates inland fisheries.	• Engage with all stakeholders in the lead-up and completion of the FRAP process, including the completion of the Socio-Economic Impact Assessment (SEIA) in order to ensure that there is a clear understanding of the fishing sector and its operations. • Finalisation of the establishments and implementation of the Consultative Advisory Forum (CAF). • Addressing regime for inland fisheries.	• Minister of DFFE • Minister of DFFE • DFFE • DHSWS	
Administration and Authorisations: • Lack or inadequate level of service delivery from Government or regulatory agencies such as administrative processing and decision-making.	• Improvement of administrative procedures and streamlining decision-making.	• DFFE	
Resource Management and Monitoring, Control and Surveillance and the Environment: • Resource degradation due to illegal overfishing and failure of the current monitoring and compliance initiatives. • Resource degradation due to climate change and natural fluctuations in the fishing resource.	• Improving the monitoring and management of the fishing resource. • Investment in scientific research and policing systems /strategies	• DFFE • Fishing Industry	

• Limited capacity for Stock Assessment. • Fishing safety. • Environmental health concerns: Degradation of water resources, water quality monitoring required, waste management.	through public and private partnerships. • Implementation of an integrated environmental management strategy.		
Infrastructure, Assets, Funding and Markets: • Insufficient assets and infrastructure owned by SMMEs in the value chain. • Limited access to funding due to lack of security of tenure and high interest rates by commercial banks. • Inadequate markets and awareness for local consumption.	• Engage SMMEs to address impediments in the value chain. • Implementation of a Market Awareness Campaign.	• DFFE • DSBD • DTIC • Fishing Stakeholders	
Skills Development and Capacity Building: • Inadequate skills transfer and capacity building particularly to marginalised fishing communities (coastal and inland).	• Skills needs analysis for the sector as well as a structure / forum to deal will skills development needs.	• DFFFE • SAIMI • Fishing Stakeholders	

Revival (up to 18 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Economic Beneficiation
Legislation, Policy and Fishing Rights: • Inability of Government to implement policy within the given structure, e.g. the delay of the current FRAP process. • Policy uncertainty surrounding the FRAP process leading to a stagnant industry struggling to attract large-scale investment.	•Completion of the FRAP process based on sector-specific economic principles and focuses on the creation of globally competitive sub-sectors.	• DFFE	• Improved and reliable infrastructure which lowers the operating costs undertaken by current rights holders. • Policy certainty and biomass stability will help contribute to overall revenue growth by > R10

Infrastructure, Assets, Funding and Markets: • Ailing support infrastructure at docks.	• Increased focus on repairing and ensuring the reliability of quality infrastructure. This is particularly important for shared infrastructure such as docks.	• TNPA • DPWI • Fishing Industry	billion over the next 10 years and an increase in employment by 10 000 – 15 000 jobs in predominantly semi-rural areas. • Rights holders will commit to making long-term capital investments in the sector estimated at R10 billion over the next 10 years. This will be directed towards asset recapitalisation. The purchasing, building or reconfiguration of factories and vessels will create indirect jobs. • Increased investment and ownership into processing and beneficiation of the natural resource to further increase employment and export opportunities.
Administration and Authorisations: • Administrative burden placed on rights holders across the fishing sector.	• Introduction of a centralised permitting and licensing system aimed at lowering the current administrative burden placed on rights holders.	• DFFE	
Resource Management and Monitoring, Control and Surveillance and the Environment: • Long-term sustainability of the fishing resource. • No clear sector-specific knowledge driving current policy objectives.	• Increased investment in the monitoring and management of the fishing resources. • A clear mandate and investment in a Scientific Resource Group to help monitor the fluctuations in the natural resource. • Increased focus on compliance across the sector and the monitoring / removal of international vessels illegally	• DFFE • Fishing Industry	

	fishing in South African waters. • Non permission by Government for foreign fishing vessels in South African waters unless suitable capacity cannot be sought in the current South African fishing industry. • Subjecting all foreign fishing vessels that are allowed to fish to the objectives and criteria imposed on rest of the sector particularly on the employment requirements.		

Growth (beyond 18 months):

Challenges / Obstacles to doing business	Interventions and Solutions	Responsibility	Economic Beneficiation
Resource Management and Monitoring, Control and Surveillance and the Environment: • Fragmentation of the fishing resources, limiting the effectiveness of rights holders across the value chain as they lose access to sufficient volumes in order to maintain the competitiveness of their operations and to create sufficient value in the sector. • Long-term sustainability of the fishing resource.	• Initiation of socio-economic studies which identify the key business models and sectors which require support to continue to add value to the sector. These studies should focus on the key growth strategies for each sub-sector and the suitable business models for the	• DFFE	• Increased investment and ownership into processing and beneficiation of the natural resources to further increase employment and export opportunities. • Increased investment and growth of the industry will lead to: - Increased support from the commercial sector towards skills development and

	identified growth plan. • Clear and concise policies articulating the objectives of Government and how applicants will be assessed in order to deliver those objectives (including policies on transformation). • Policies should be set-out in a clear framework and should be used to facilitate increased interaction among key stakeholders across the sector.		small-scale fisheries to the value of over R300 million in the next ten years. - Increased expenditure aimed at SMMEs beyond the current R1 billion per annum. - Commitment to continued improvement in transformation across the industry on all DTI B-BBBEE codes and increase in black ownership (up from 75% to 80%) over the next 15 years.
Infrastructure, Assets, Funding and Markets: • Capital intensity of the sector may limit the ability of certain rights holders to effectively vertically integrate across the value chain.	• Government must increase financial aid to medium and smaller rights holders in order to assist with vertical integration and global competitiveness in smaller (in terms of value) sub-sectors. • A focus on supporting competitive business models by avoiding fragmentation of the fishing rights for vertically integrated companies which continue	• DFFE • DSBD • DTIC	

	to contribute to the sector through value creation (e.g. investment, employment and transformation).		
Administration and Authorisations: • Administrative burden placed on rights holders across the fishing sector.	• Introduction of a centralised permitting and licensing system aimed at lowering the current administrative burden placed on rights holders.	• DFFE	

8. CONCLUSION

The South African Oceans Economy has the potential to contribute immensely to economic growth and development and make a positive impact. There are a number of sub-sectors that have not been explored and its economic potential will be determined on further economic analysis.

Further consultations with the respective stakeholders will continue to improve the content and ensure that all the critical aspects for the Sub-sectors are included. The Small Harbours Development and Coastal and Marine Tourism Sub-sectors will be included as part of the overall Oceans Economy Master Plan and further work is still required.

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