



REPUBLIC OF SOUTH AFRICA



OCEANS ECONOMY

AQUACULTURE
Portfolio Committee
24th October 2017

OPERATION PHAKISA: OCEANS ECONOMY

DEA, DPME, DOT, DPE, DTI, DMR, DOE, DAFF, DST, DHET, DPW, DRDLR, DOL, DHA, NT, DSBD, DOD, EDD, DOW, NDT, DIRCO, DBE, DWS

OCEANS ECONOMY FOCUS AREAS AND ENABLERS

-  **Marine Transport and Manufacturing**
-  **Offshore Oil and Gas**
-  **Aquaculture**
-  **Marine Protection Services and Ocean Governance**
-  **Small Harbours and Coastal Development**
-  **Coastal and Marine Tourism**
-  **Skills Development and Capacity Building**
-  **Research, Technology and Innovation**

It is estimated that the oceans economy has the potential to contribute up to R177 billion to Gross Domestic Product (GDP) by 2033 (compared to R54 billion in 2010) and create approximately 1 million jobs (compared to 316 000 in 2010).

OPERATION PHAKISA: ENVISAGED ECONOMIC GROWTH

	SHORT TERM 2016	MEDIUM TERM 2019	LONG TERM 2033
Jobs	26 000 jobs cumulative	77 100 jobs	1 million jobs
Economic growth	GDP contribution of R7.5 bn ¹	GDP contribution of R32 bn ¹	GDP contribution of R129-R177bn ¹
Transformation indicator	<ul style="list-style-type: none"> •Monitoring of Maritime BEE Charter and application of BEE Codes in National Ports Act. (min level 4 BEE and focus on Ownership and Operation). •15% transformation (Aquaculture). •Opportunities for SMME's. 	<ul style="list-style-type: none"> •Monitoring of Maritime BEE Charter and application of BEE Codes in National Ports Act. (min level 4 BEE and focus on Ownership and Operation). •26% transformation (Aquaculture). •Opportunities for SMME's. 	<ul style="list-style-type: none"> •Monitoring of Maritime BEE Charter and application of BEE Codes in National Ports Act. (min level 4 BEE and focus on Ownership and Operation). •50% transformation (Aquaculture). •Opportunities for SMME's.

1. Jobs created through employment multiplier

OPERATION PHAKISA: ENVISAGED ECONOMIC GROWTH BY 2019

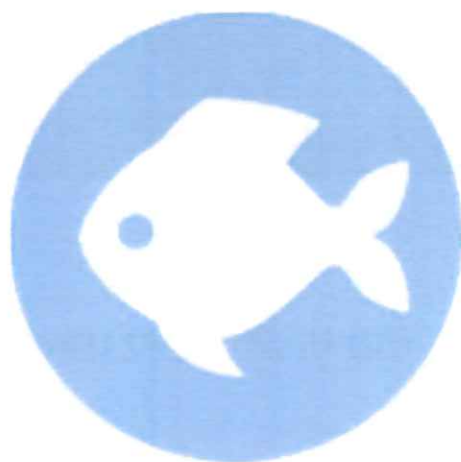
	MARINE TRANSPORT AND MANUFACTURING	OFFSHORE OIL AND GAS EXPLORATION	AQUACULTURE	SMALL HARBOURS	COASTAL AND MARINE TOURISM
Jobs	Jobs from 6 000 to 40 000 - 50 000 created		Jobs from 2 227 to 15 000 created (incl. value chain)	Potential jobs of 12 100.	
Economic growth	GDP contribution from R7bn1 to R14-23 bn	Promotes exploration in order to drill 30 exploration wells in 10 years	GDP contribution from R0.7 bn1 to R3 bn	GDP contribution of R6 bn.	
Transformation indicator	•Market share of SA companies to 30%		•Inclusive growth	•Inclusive growth	

OCEANS ECONOMY IMPACT

Operation Phakisa: Oceans Economy commenced with operational work after the October 2014 launch. Overall progress to date includes:

- Government has unlocked investments amounting to approximately R 24,569 billion in the Oceans Economy.
- Over 6 517 jobs have been created in the various sectors.

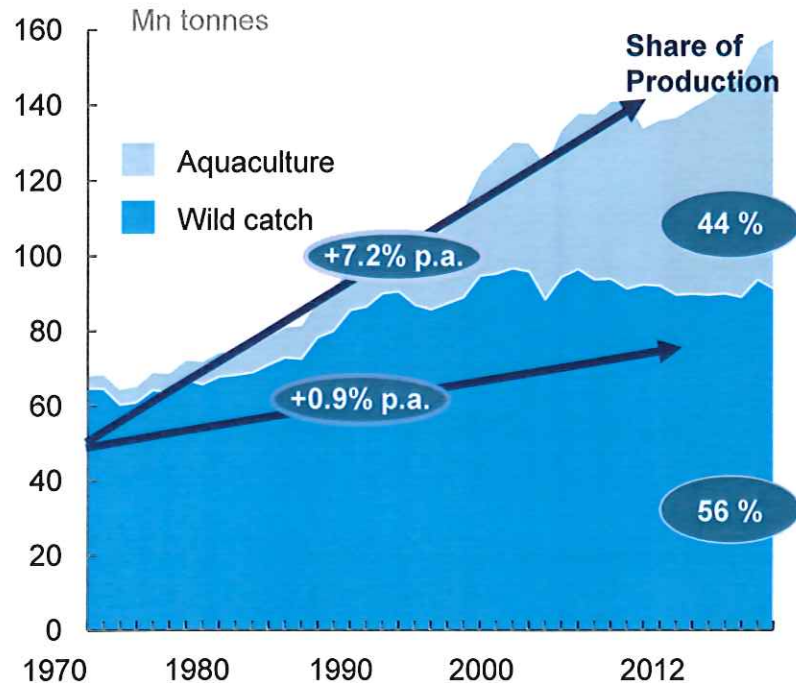




Aquaculture

Globally, Aquaculture contributes to almost half of total supply

Global total fish production – wild catch and farmed (reported)



- Aquaculture production has shown strong growth of 7.2% p.a. from 1970 to 2012.
- Of the 141 million tonnes of fish consumed, over 70 million tonnes come from aquaculture which about 50%
- An additional 50 million tonnes of fish is required to feed the world population by 2030 and this production will come mainly from aquaculture

Factors influencing supply

Supplementing wild capture within maximum sustainable yields

- The need to employ sustainable fishing methods has become more important due to dwindling stocks of certain species
- FAO has classified most wild fisheries as either fully exploited or over exploited
- Increasing demand for fish products

Better technologies and production methods

- New technologies and breeds e.g. RAS system and GIFT strain for tilapia has enabled better yields and lower long term input costs
- Higher stocking capacity for shrimps which allows for higher yield
- Investment in research and development

Food Security

- Governments have a responsibility to ensure that everyone has enough to eat.
- Food needs to be available, accessible and affordable through a resilient and reliable supply system
- Fish is regarded as an essential part of a healthy and nutritious diet

The Lab aspires to catalyse growth in the sector by scaling up the sector as an initial step to sector development

HEADLINES 2019: SA economy reaps the rewards of Operation Phakisa

“...to Aquaculture in South African has shown strong growth in 5 years, with **production from 2014 up 5 fold to 20,000 tonnes...**”

“... The Aquaculture sector in South Africa now **employs 15,000 people in direct and full time jobs.....**”

“Jobs in Aquaculture sector seen as **quality jobs, improving livelihoods in rural communities....**”

“...experts estimate the **revenue contributed by Aquaculture to South Africa's economy to be as much as R 3 Bn...**”

“...exciting momentum built in Operation Phakisa evidenced by **Aquaculture's inclusive growth...**”



Abalone



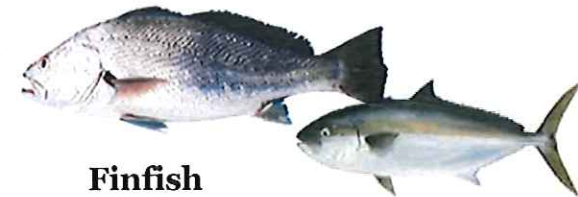
Oyster



Mussels



Finfish



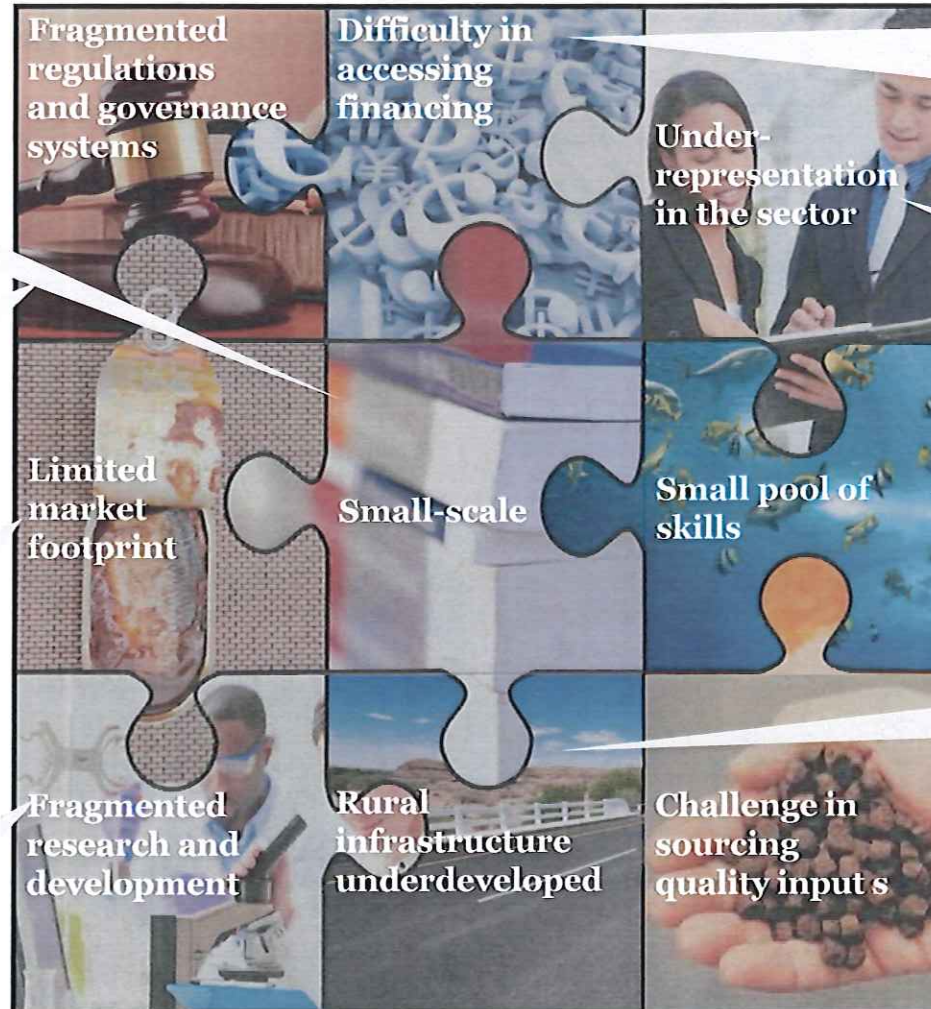
The Aquaculture sector in South Africa has incredible potential and yet remains at a small-scale leading to many challenges for producers

"...We don't have the economies of scale to be commercially viable ..."

"...It's taken 28 months to get a single permit to expand my farm..."

"...we should be supplying salmon and trout instead of importing 1000s of tonnes..."

"...our R&D should focus on meeting market demand in South Africa..."



"... The way the banks price risk is crazy... few people really understand the nature of our business..."

"...PDIs only make up less than 10% of the sector..."


"...I lost all my fish since there was no fish vet..."

"...High set-up costs are a huge barrier to entry in this sector..."

"...We don't have the economies of scale to get quality feed from suppliers..."

Aquaculture Operation Phakisa Initiatives developed during the lab (October 2014)

1 Selection and Implementation of Catalyst Projects



- 2 Legislative reform**
- 3 Inter-Departmental Authorisations Committee**

- 4 Globally recognised monitoring and certification system**

Regulations



- 5 Aquaculture Development Fund**

Funding



- 6 Capacity building and skills development**

Skills



- 7 Coordinated industry-wide marketing efforts**

- 8 Government Preferential Procurement**

Market



Overview of Initiatives

★ Initial short-term targets

Phase 1: Implementation of initiatives in 6 to 12 months Quick wins

- ✓ 1a ★ Implementation of 9 initial projects
- 3 ★ Establishment of an Inter-Departmental Authorisations Committee
- 5 ★ Establishment of an Aquaculture Development Fund
- 7 ★ Coordination of industry-wide marketing efforts

Phase 2: Implementation of initiatives in 12 to 24 months

- ✓ 1b Implementation of 6 ready-to-operate projects and selection of additional projects
- ✓ 2 Legislative reform to promote Aquaculture development
- 4 Establishment of a globally recognised monitoring and certification system
- 6 Capacity building and skills development
- 8 Preferential Procurement of Aquaculture products

Phase 3: Implementation of initiatives in 2 to 4 years

- 1 Implementation of 12 ready-to-operate projects and selection of additional projects
- 6 Capacity building and skills development

AQUACULTURE KEY PERFORMANCE INDICATORS (2016)

Total Phakisa Aquaculture Projects = 36 (26 producing animals)

INVESTMENTS TO DATE:

By end of 2016, total investment committed to Operation Phakisa Aquaculture Projects was R690 million, of which government committed R227million.

Note: Total aquaculture sector investment still being collected.

PRODUCTION:

- 26 of the 36 Projects Operational
- Operational Phakisa Projects Production: 3500 tons

Note: Total sector production is still under verification

TRANSFORMATION (24 of 36 Projects):

SMMEs	15+
Cooperatives	1
BBBEE	Average BBBE = < 4

AQUACULTURE KEY PERFORMANCE INDICATORS (2016) Cont.

DIRECT ON-FARM JOB CREATION (Verification underway) :



Total jobs on the 26 farms in 2016	1806	<u>Disaggregated jobs</u> (of Total jobs on farm): <ul style="list-style-type: none"> 29% Females 47% Youth 60 % African black 29% Coloured Disabilities: no employees with disabilities reported Veterans: no registered veterans were reported
Total jobs on 23 farms in 2015	1550	
New jobs created in 2016	171	
Additional existing jobs from 3 new projects	85	
TOTAL NEW JOBS SINCE 2014: 301 (in 2015) +171 (in 2016) = 472 = 56% of Lab Estimate (page 40)		

✓
Unforeseen natural events can affect performance



THE BLUE BEAUTY OF THE BEAST

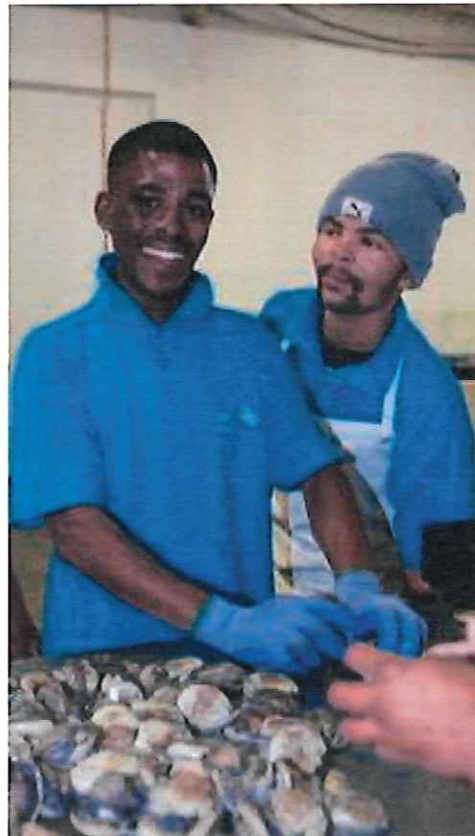
What the sea lacks in beauty in the daytime during the red tide, it makes up for at night with spectacular displays of phosphorescence in Walker Bay. According to resident Ronnie Hazell there have been beautiful displays in the breaking waves and spray along the Hermanus coastline.

PHOTO: Ronnie Hazell

Monstrous red tide is the largest ever

- Abalone sector in Hermanus suffered severe losses due to a serious red tide Jan to March 2017. The final damage has not been quantified but by end of March 2017 over 220 tons had been lost, amounting to over R100 million.
- The farms are currently recovering and ensuring jobs are sustained. The impact of the red tide has severely impacted the production chain and the annual production of the sector (abalone sector main producer) for the next 2-4 years and will impact the Phakisa Targets.
- **Collaborating and improving on existing early warning system with DEA is paramount to addressing future blooms. Develop more hatcheries in other provinces is likewise important to reduce the risk on the sector.**

Progress of Aquaculture Lab

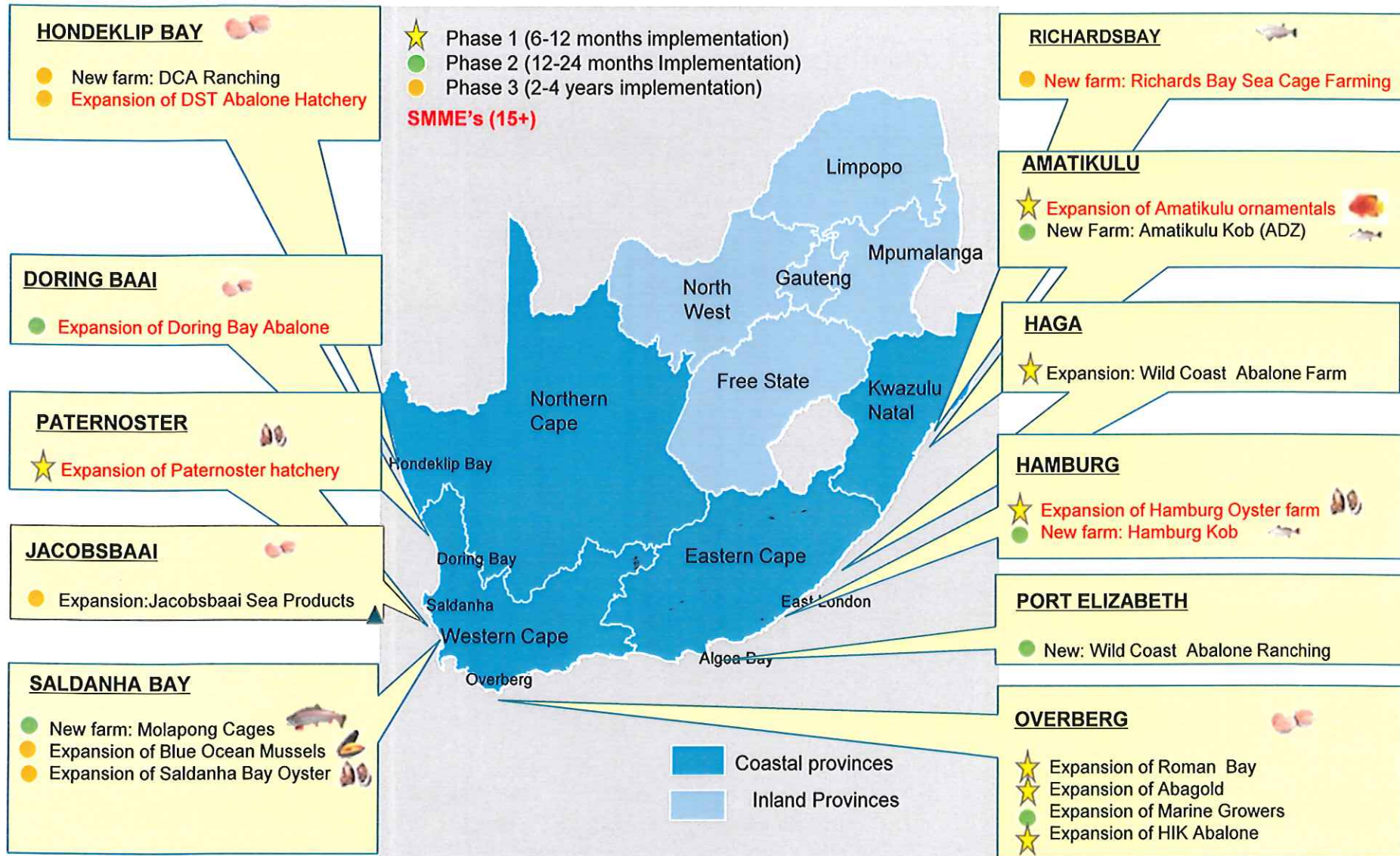




INITIATIVE 1: IMPLEMENTATION OF CATALYST PROJECTS

- Current number of aquaculture Operation Phakisa projects = **36**
 - **Original projects:** Five (5) of the original 24 projects conceptualised during the lab have been removed and placed on business opportunities.
 - **New Projects:** Seventeen (17) projects accepted in the Lab in 2014
 - 26 of the 36 projects are producing aquatic animals.
- While projects are expanding and progressing, many projects are experiencing various challenges around funding, water leases, land leases and authorisations.

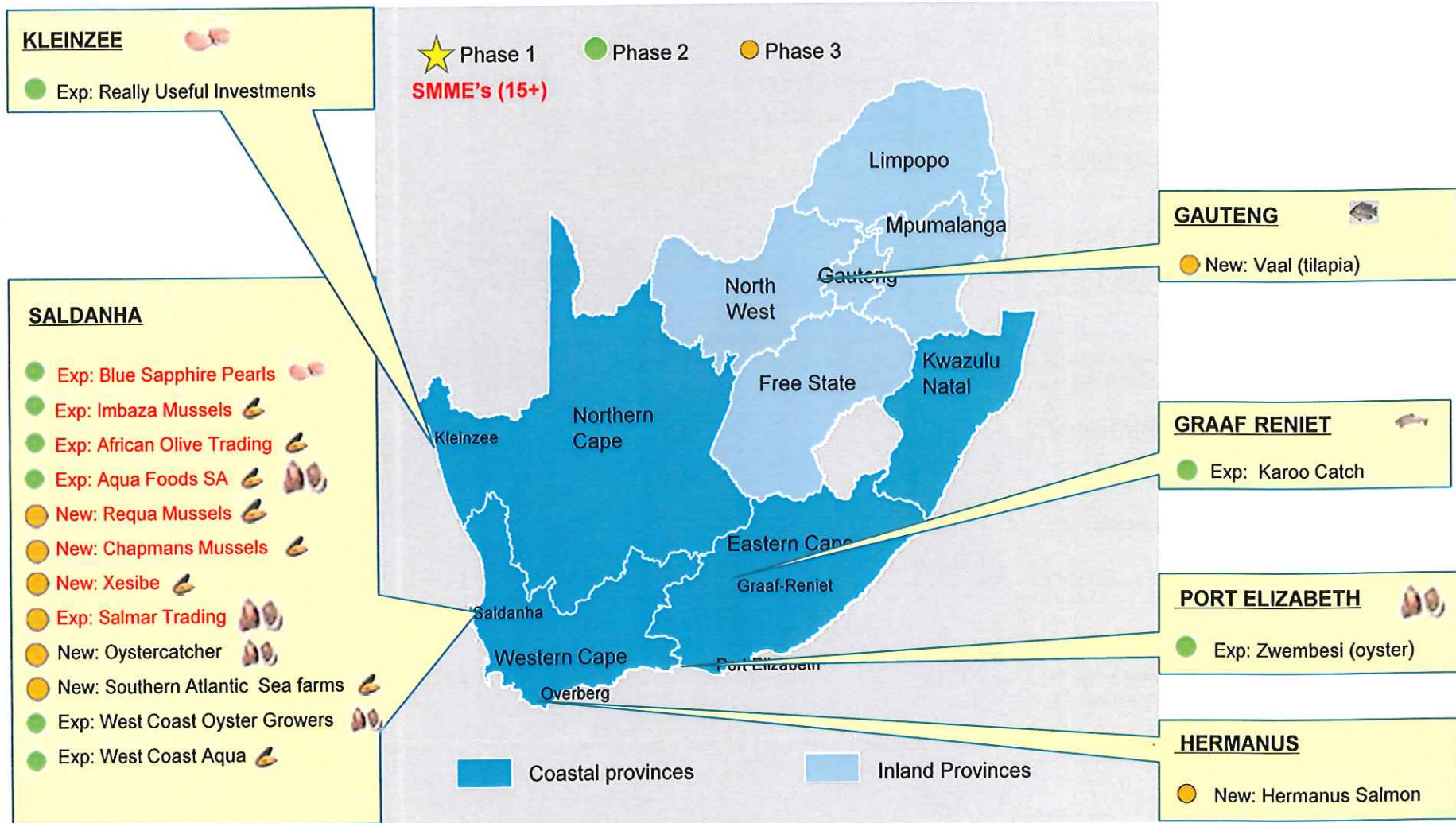
LOCATION AND SPECIES OF 24 ORIGINAL AQUACULTURE PROJECTS



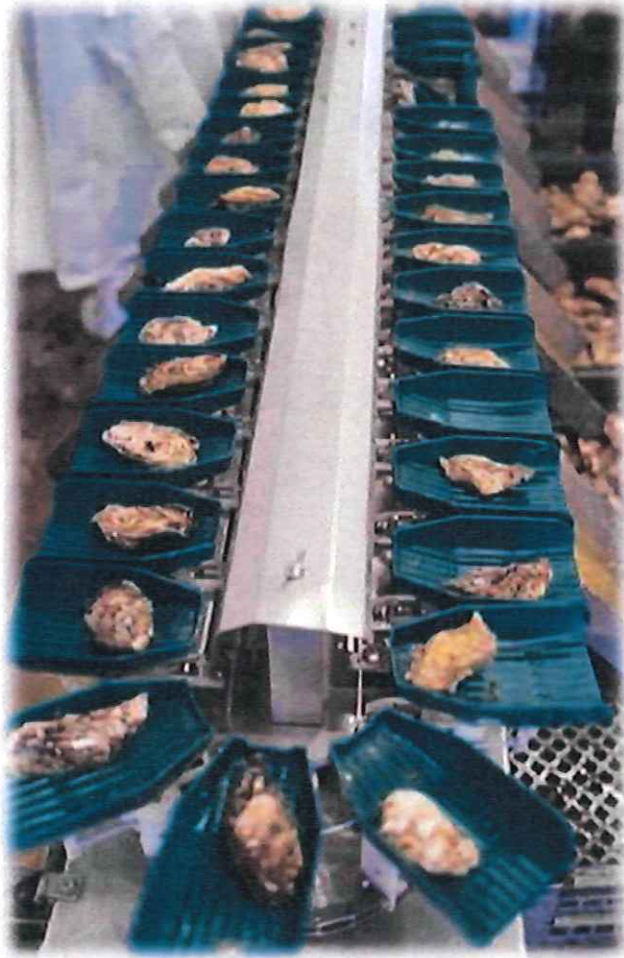
5 projects removed, placed onto business opportunities

Ventersdorp Catfish, ADZ Ventersdorp, Algoa Bay Yellowtail, Oceanwise ELIDZ and Southern Atlantic

LOCATION AND SPECIES OF 17 NEW AQUACULTURE PROJECTS SINCE 2014



Highlights for Projects (Initiative 1) to date:



DST/SU: KOB FARM IN RICHARDS BAY

- 22 tons of first market size dusky kob harvested in Richards Bay in June/July 2017.
- Fish size ranged from 1.1 to 1.6kg
- Food safety criteria were tested and met.
- Market testing and analysis was undertaken on harvested product.



Project Highlight



AFRICAN OLIVE TRADING

Project Highlight

African Olive Trading opened its processing facility in Veldrift on 1 March 2017.

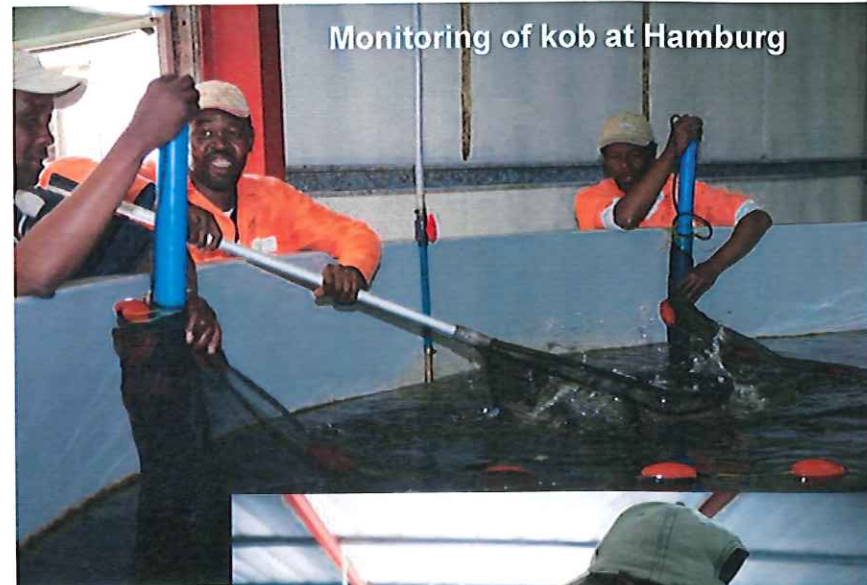
This processing plant created 47 new jobs (40 factory workers; 7 managers)

It is a BEE level one project and has also added 5 additional rafts on the farm.



✓ PROJECT HIGHLIGHTS

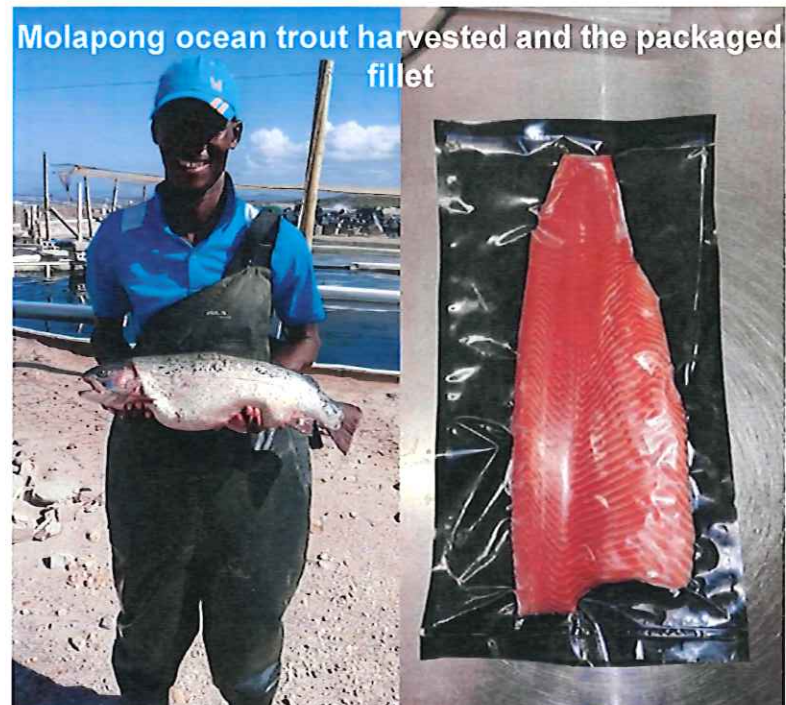
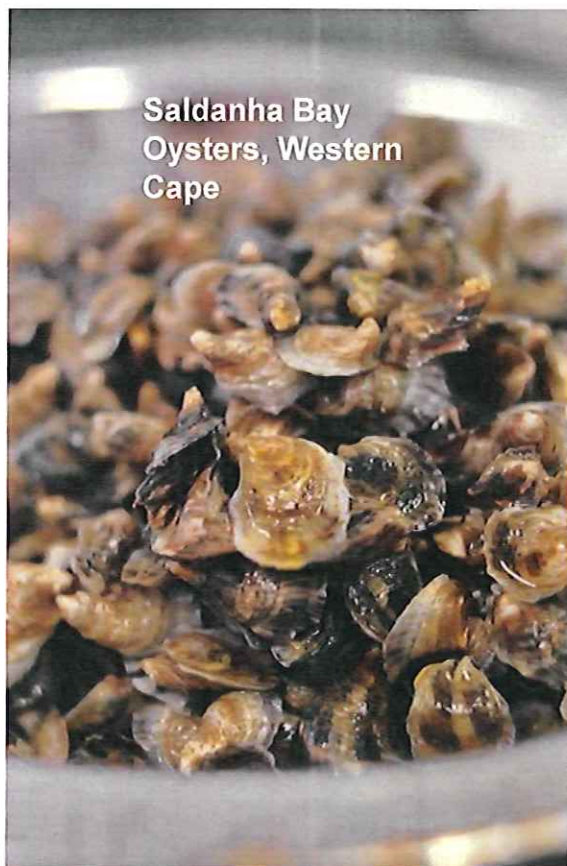
- In the Eastern Cape, the Hamburg Community Project employs 23 people with the capacity to produce 20 tons of dusky kob per annum and has already sold its first harvest to the Cape Town Fish Market at the V&A Waterfront in Cape Town.



- The abalone ranching project in the Eastern Cape seeded 1, 8 million spat along 20 kms of the coast. This represented a potential economic value of R26 million to South Africa.

PROJECT HIGHLIGHTS

- First ocean trout and salmon project has 50 000 fish in the cage and plans to grow the fish to 2-3 kg each by end of 2017



- One of the Phakisa projects recently approved as an exporter to both Mainland China and Taiwan for oysters.

✓ INITIATIVE 2: LEGISLATIVE REFORM

Aquaculture Development Bill:

- The Aquaculture Development Bill was signed off by the National Economic Development and Labour Council (NEDLAC) in September 2017.
- The Bill is due to be presented at Cabinet in early 2018.

Strategic Environmental Assessment (SEA):

- Suitable aquaculture development areas have been screened and reviewed by key stakeholders through consultative workshops.
- Once the project is completed the areas deemed suitable for aquaculture development will require limited/no further environmental studies thus encouraging investments. (See next slide)

Norms and Standards for Abalone

- Norms and Standards for Abalone were gazetted in Feb 2016 but will most likely be incorporated within the SEA process.

A **Delays/Challenges:**

- The General Authorisation for Coastal Discharges (which includes aquaculture) is being significantly revised so the whole process has started again (DEA).
- The mapping and regulations of trout is behind schedule and there is lack of consensus around the authorisation of tilapia aquaculture between provinces, national DEA and industry.

SEA: Initial areas screened for further investigation for aquaculture development

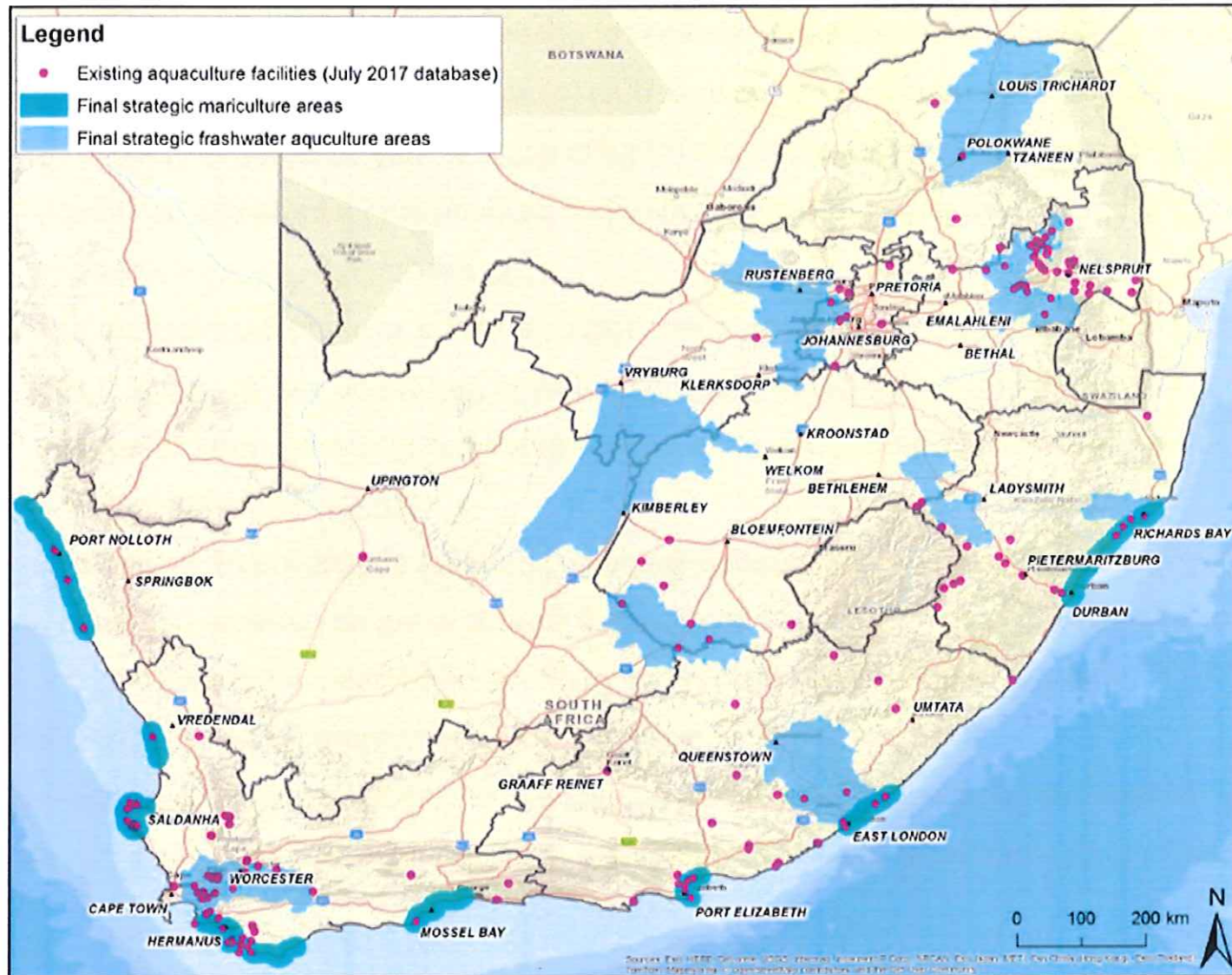


Figure 18: Final strategic aquaculture areas in relation to existing aquaculture facilities (based on the Existing Facilities Database dated July 2017).

✓ INITIATIVE 3: INTERDEPARTMENTAL AUTHORISATIONS COMMITTEE (IAC)

- The IAC is made up of the following key member departments: Agriculture Forestry and Fisheries, Public Works, Environmental Affairs, Rural Development and Land Reform, Water and Sanitation, Public Enterprises (Transnet) and Mineral Resources.
- Since its establishment in September 2015, the IAC has achieved the following:
 - Final report received on the **mapping of business processes (GTAC)** pertaining to aquaculture authorisations required by various departments was presented to the IAC and finalised end of March 2017.
 - **Access to land:** Seven (7) of eight (8) initially approved leases have been signed off. The DAFF and DPW met on the 24th of March 2017 to discuss the **six (6) additional leases still outstanding for over a year and this has been escalated. Follow up meeting scheduled for 11th of October 2017.**
 - **Access to sea space:** One hundred and forty (140) hectares has been made available to 10 projects in Saldanha Bay of which eight (8) are long-term leases (15-years) and two (2) are short-term leases (5 years). Six (6) long-term and two (2) short-terms leases have been signed by both parties. **Another seven leases was advertised by Transnet National Ports Authority on the 30th of March 2017 but yet to be finalized.**

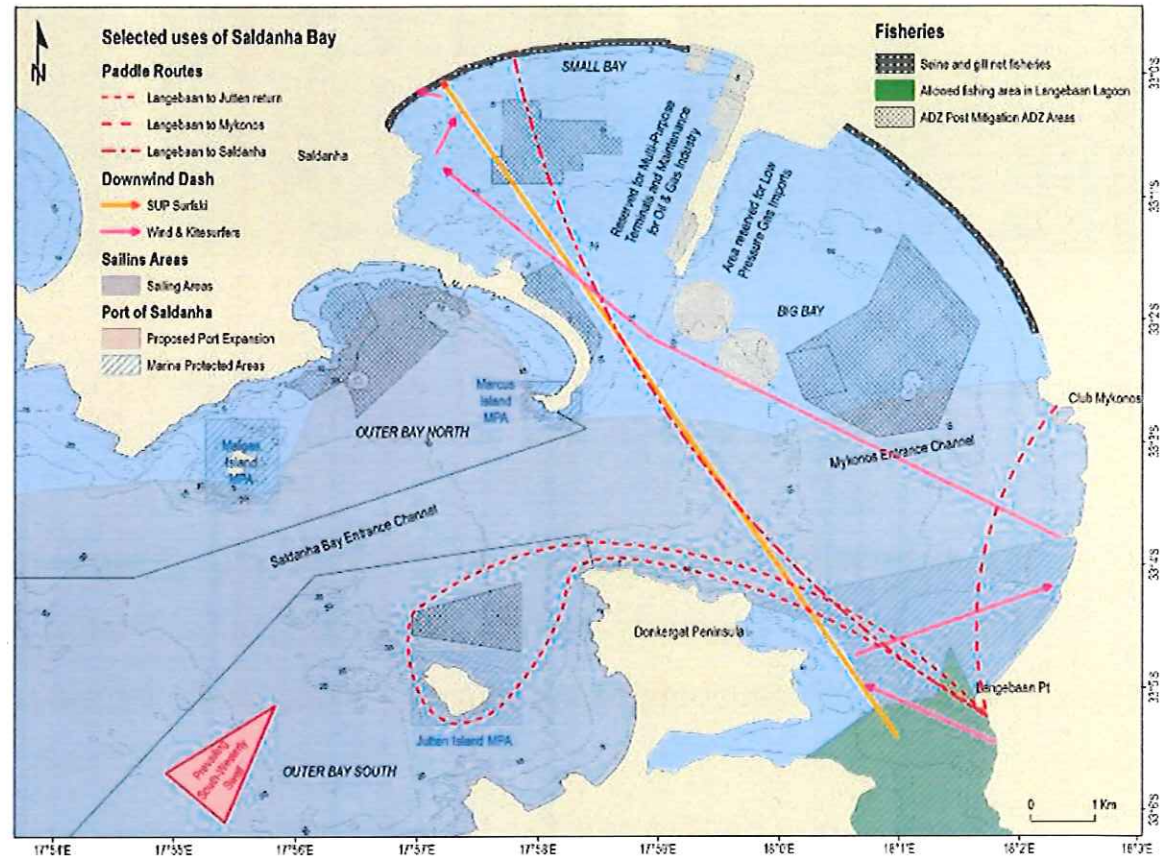
SALDANHA BAY AQUACULTURE DEVELOPMENT ZONE EIA

* FINAL Basic Assessment Report submitted to DEA for consideration September 2017

- **Potential Benefits:**

- The ADZ has the potential to unlock an additional of 780-2500 direct jobs, over R400 million investments and over R800 million turn-over per annum.

- Direct jobs could contribute up to 25% to current unemployment figures and further upstream and downstream jobs will increase this.



- Realising the full potential of the aquaculture industry in Saldanha Bay can contribute towards alleviating poverty, empowerment and enhancing food security through access for new projects. This assists the growth and transformation of the sector.



INITIATIVE 4: ESTABLISHMENT OF A GLOBALLY RECOGNISED MONITORING AND CERTIFICATION SYSTEM

- The DAFF & National Regulatory for Compulsory Standards (NRCS) **service level agreement** to undertake independent food safety sampling was **signed and is being implemented**.
- The European Union (EU) Residues and Public Health Audit audited the aquaculture sector in February 2017. Various interventions were identified during the visit which may ultimately lead to South Africa being able to apply to be registered to export abalone and finfish to the EU.



INITIATIVE 5: AQUACULTURE DEVELOPMENT FUND

- **The ADF Working Group is made up of the following key Development Funding Institutions (DFI's) and departments:**
- **Agriculture, Forestry & Fisheries: Comprehensive Agriculture Support Programme & Mafisa Fund; Industrial Development Corporation (IDC); Land Bank; Eastern Cape Development Corporation (ECDC); Eastern Cape Rural Development Agency (ECRDA); Science & Technology; Jobs Fund; National Empowerment Fund; Trade & Industry; Small Business Development; National Treasury Government Technical Advisory Centre (GTAC)**
- **Final report on the Aquaculture Development Fund model and mechanism was received from GTAC end of March 2017.**
 - In process of creating Memorandum of Co-operation (MoC) between relevant Departments and implementing the recommendations.
- **Feasibility studies** were finalised on marine finfish, oyster and mussels. Further feasibility studies underway for tilapia, trout, abalone, sea urchin, catfish, freshwater ornamentals, marron crayfish & aquaponic systems.





INITIATIVE 5: AQUACULTURE DEVELOPMENT FUND (cont.)

- **Investment Promotions**

- First round of investment readiness consultations were held with Saldanha Bay Operation Phakisa projects with Wesgro (Western Cape Trade & Investment Agency) from 23-24 February 2017. Implementation in other provinces to follow.
- It was noted many projects require assistance with detailed and audited business plans, this assistance is being supplied through SEDA (Small Enterprise Development Agency).
- Projects requiring investment have been presented and profiled at investment conferences nationally and internationally.
- Delivery unit hosted the Thailand Board of Investment delegation at Amatikulu in Kwa-Zulu Natal during their Investment Opportunities Survey in the Republic of South Africa. They surveyed the aquaculture development zone on 12 July 2017



INITIATIVE 6: CAPACITY AND SKILLS DEVELOPMENT

- A skills and needs analysis assessment of the sector is currently underway to inform further interventions and skills requirements. The draft report was received for review in September 2017. It is funded by AGRISETA and the National Skills Fund (DHET) through SAIMI (South African International Maritime Institute).
- **In order to address the scarce aquatic veterinarian skills and services available in South Africa, DAFF and Stirling University have signed an agreement for training of aquatic vets and aquaculture specialists. Five (5) veterinarians began training from Sept 2017 for a year.**
- The Gariep Dam Aquaculture Training Centre was officially handed over to South Africa in June 2017 and conducted training for:
 - 385 farmers/students (104 for Jan-March)
 - 534 visits/tours
 - 25 interns (16 for Jan-March)



INITIATIVE 7: COORDINATION FOR INDUSTRY WIDE MARKETING EFFORTS

- New markets have been explored and received interest from:
 - Iran for tilapia
 - China (Taiwan) for farmed oysters
 - Europe for finfish and abalone
- Product development: Catfish boerewors by Karoo Catch, available at Spar Supermarket.

Delay/Challenges:

- Industry has limited capacity to drive the marketing initiative as was planned in the Lab..



INITIATIVE 7: COORDINATION FOR INDUSTRY WIDE MARKETING EFFORTS

Communication & Awareness

- Year Two Review publication and Aquaculture Photobook have been published to raise awareness on the progress in the second year of implementation and showcase the operations of 13 farms.
- **The first international conference and exposition of the World Aquaculture Society (WAS) to be held on the African continent at the Cape Town International Convention Centre 26-30 June 2017.** The conference was co-organized by WAS with the Aquaculture Association of Southern Africa (AASA) and the South African Department of Agriculture, Forestry and Fisheries (DAFF).
- WA2017 attracted an entirely new pan-African participation to the international aquaculture community, with:
 - 1297 of the delegates originating from 33 African countries.
 - 87 exhibitors.
 - 489 presentations and 215 posters from 87 countries.





INITIATIVE 8: PREFERENTIAL PROCUREMENT OF AQUACULTURE PRODUCT

- **Interest has been expressed** for aquaculture products from the Free state Economic Development Agency.
- **Feasibility studies** further illustrated the importance of preferential procurement opportunities that need to be investigated. **Key recommendations of feasibility reports include:**
 - Need to explore government procurement (dusky kob)
 - Undertake international market assessments (dusky kob)
 - Invest in research to reduce production costs (dusky kob)
 - Engage with local and international feed producers to reduce cost and improve quality.
 - Align institutional support and incentives for aquaculture (SARS, etc.)
 - Investigate centralised hatchery for salmon and oyster production
 - Increase lease durations to secure investment
 - Establish and open further international markets (shellfish)



ACRONMYS

- ADZ Aquaculture Development Zone
- BEE Black Economic Empowerment
- BBBEE Broad Black Based Economic Empowerment
- DEA Department of Environmental Affairs
- DAFF Department of Agriculture, Forestry and Fisheries
- ELIDZ East London Industrial development Zone
- FAO Food and Agriculture Organisations of the United Nations
- GDP Gross Domestic Product
- GIFT Genetically Improved Farmed Tilapia
- IAC Interdepartmental Authorisations Committee
- NEDLAC National Economic Development and Labour Council
- RAS Renin-Angiotensin System
- SEA Strategic Environmental Assessment
- SMME's Small, Medium and Micro sized Enterprises

