



OPERATION PHAKISA

Unlocking the Oceans Economy
through Aquaculture

Department of Agriculture,
Forestry and Fisheries

Aquaculture Year
Three Review
Oct 2014 – Oct 2017



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA





Sorting of oysters at West Coast Oyster Growers project



Placing oysters into baskets



Blue Sapphire Pearls oyster project



Mussels at the processing factory



West Coast Oyster Growers steaming mussels



An oyster opened up



Oysters in the water



Abalone



Farmer holding fully grown oyster in her hand



Farmed mussels



Oysters on the sorting machine



Dusky kob from Richard's Bay sea cage culture project

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ABBREVIATIONS

AASA	Aquaculture Association of Southern Africa
ADEP	Aquaculture Development and Enhancement Programme
ADF	Aquaculture Development Fund
ADZ	Aquaculture Development Zone
BEE	Black Economic Empowerment
BBBEE	Broad Based Black Economic Empowerment
CASP	Comprehensive Agricultural Support Programme
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DFI	Development Funding Institutions
DHET	Department of Higher Education and Training
DTI	Department of Trade and Industry
EC	Eastern Cape
ECDC	Eastern Cape Development Corporation
ECRDA	Eastern Cape Rural Development Agency
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organisation

GDA	General Discharge Authorisation
GDP	Gross Domestic Product
GP	Gauteng Province
GTAC	Government Technical Advisory Centre
IAC	Inter-departmental Authorisations Committee
IDC	Industrial Development Corporation
MAFISA	Micro Agricultural Financial Institutions of South Africa
NC	Northern Cape
NEDLAC	National Economic Development and Labour Council
NEPAD	New Partnership for African's Development
NRCS	National Regulator for Compulsory Standards
SA	South Africa
SAIMI	South African International Maritime Institute
SARS	South African Revenue Service
SEA	Strategic Environmental Assessment
SEDA	Small Enterprise Development Agency
SMMEs	Small, Medium and Micro-size Enterprises
TIA	Technology Innovation Agency
WAS	World Aquaculture Society
WC	Western Cape

FOREWORD BY THE MINISTER



Mr Senzeni Zokwana (MP)

Minister of Agriculture, Forestry and Fisheries

It is my pleasure to present the 2016/17 Operation Phakisa: Oceans Economy Aquaculture Year Three Review. It has been three years since the launch of Operation Phakisa: Ocean's Economy and substantial progress has been made to grow the aquaculture sector. This publication is a key mechanism for the department to report on progress and achievements in the eight aquaculture initiatives launched in 2014 against the aspirations and key performance areas (KPA) developed during the Aquaculture Lab (the planning session).

There have been fundamental highlights and challenges during year three, a few highlights include the Aquaculture Development Bill which underwent NEDLAC (National Economic Development and Labour Council) processes and is now due to be presented at Cabinet. In order to build capacity and address scarce skills in the short term, the department has sent five provincial vets to the University of Stirling for a one year Masters in Aquatic Medicine. During June 2017, the first international conference of the World Aquaculture Society was successfully held on African soil at the Cape Town International Convention Centre bringing together more than 1300 aquaculture professionals; 490 presentations; 87 exhibitors as well as investors and students from all around the world.

Various aquaculture authorisations were completed and new projects came on-board to increase production, jobs and gross domestic product (GDP). The Aquaculture Development Fund working group has developed a model and mechanism to support new and existing entrants with finance. In order to expand export markets, the European Union (EU) came to South Africa to audit the aquaculture sector. The progress on these is further discussed in the report.

The department will continue to work towards the realisation of the aquaculture aspirations to build a thriving sector that contributes towards food security, job creation, transformation and contribution to the country's GDP. I would like to extend acknowledgement to the aquaculture industry, sub-sector associations, project owners, management team and staff for continued support and hard work in pursuit of developing a sustainable aquaculture sector in the country.

Mr Senzeni Zokwana (MP)
Minister of Agriculture, Forestry and Fisheries

1. ANNUAL REVIEW: OPERATION PHAKISA OCEAN'S ECONOMY: AQUACULTURE

1.1 INTRODUCTION

Operation Phakisa is a results-driven approach to development, involving various sectors such as business, labour, academia, civil society and government. These stakeholders worked together to develop delivery action plans with set targets which require ongoing monitoring of progress and making these results public, in order to address the triple challenges of poverty, unemployment and inequality.

THE OPERATION PHAKISA: OCEAN ECONOMY FOCUSES ON:

- Marine Transport and Manufacturing, led by the Department of Transport;
- Offshore Oil and Gas, led by the Department of Mineral Resources;
- Aquaculture, led by the Department of Agriculture, Forestry and Fisheries;
- Marine Protection Services and Ocean Governance, led by the Department of Environmental Affairs;
- Small Harbours Development, led by Department of Public Works; and
- Coastal and Marine Tourism, led by the Department of Tourism.

All initiatives are enabled by skills development and capacity building, led by the Department of Higher Education and Training, and research technology and innovation initiatives, led by the Department of Science and Technology. The Department of Agriculture, Forestry and Fisheries (DAFF) is the lead department for the Oceans Economy Aquaculture focus area and its deliverables. The lab concluded that South Africa's aquaculture sector has a high growth potential due to an increasing demand of fish products due to the increasing global population; increasing income by the middle class in developing countries and more awareness on the dietary benefits offered by fish products. Moreover the capture fisheries yield has been plateauing over the past decade while aquaculture continues to grow over 7% per annum. This growth is expected to continue at a higher rate in the future. The goal is to grow the aquaculture sector in South Africa to play a major role in supplying fish products; an enhanced role in job creation, increased contribution to national income and rural livelihoods. The targets over five years (2014-2019), seeks to grow sector revenue from R0, 67 billion to R3 billion; production by 20 000 tons; jobs from 2 227 to 15 000 and to ensure increased participation to support transformation in the sector.

During the Ocean's Economy planning phase, the 'Aquaculture Lab' comprised of stakeholders from industry, government and academia who identified eight (8) key initiatives, which are expected to spur the growth of the sector. One initiative addresses the selection and implementation of 24 catalyst projects, improving both the number and productivity of the new farms. Three initiatives relate to the creation of an enabling regulatory environment and others focus on funding support, increasing skills pool and awareness and improving access to markets. To deliver these initiatives, the Aquaculture lab created detailed implementation plans and accompanying budgets, a proposed governance system to take responsibility for initiatives and key performance indicators to help monitor delivery. The highlights outlined are consequences of the good progress achieved on the 3 feet plans across the three horizons defined by the lab participants in 2014. The previous Year One Review and Year Two Review are both available online on the DAFF website: <http://www.daff.gov.za/daffweb3/Branches/Fisheries-Management/Aquaculture-and-Economic-Development/Operation-Phakisa>.

1.2 PROGRESS ON AQUACULTURE KEY PERFORMANCE INDICATORS

It has been three years since the introduction of Operation Phakisa: Ocean's Economy and substantial developments have been made to grow the aquaculture sector.

2017 LAB PROJECTIONS :

During 2017 as per the 3 feet plans, a projected additional investment of R890 million (*Government and Private*) was required to unlock an additional 640 direct jobs, 6500 tons production and increase turnover across the 36 projects to over R770 million per annum. *The actual data will be collected and analysed during June 2018 and reporting will be reflected in the Year 4 Review publication.



2016/2017

By end of 2016, total actual investment committed to Operation Phakisa Aquaculture Projects was over **R690 million**, of which over **R227 million** was from government. The additional investment in 2016 was **R246 million**. This is **32.8%** of the projected additional **R750 million** projected target.

2016 PROJECTED

During phase two of Operation Phakisa (2016) an additional investment of **R750 million** (*government and private*) was projected.



2016/2017

Operation Phakisa project transformation statistics in 2016:

SMMEs = 15

Cooperatives = 1

Average BBBEE Level = < Level 4

TRANSFORMATION



2016/2017

PRODUCTION

Phakisa projects contributed a total of **3500 tons** production in 2016, of which **424.3 tons** were additional. Additional (this equates to **21%** of the total production projected in 2016). The total production for the entire sector is **6000 tons**. The production target set in the Phakisa Lab report for 2016/2017 was 7400, therefore in terms of the sector as a whole the production is **81%** on target.

2016 PROJECTED

2000 additional tons production.



2016/2017

GDP

Total estimated turnover (based on tonnage) across **36 projects** amounted to over **R 608 million** per annum in 2016.

(There was a **R108 million increase** in GDP contribution in 2016. **25%** of the projected **R500 million** per annum.)

2016 PROJECTED

The projected increased turnover is **R500 million** per annum across the **35 projects**.



JOBS

2016/2017

The total number of jobs contributed by Operation Phakisa projects was 1806, these included:

- **1550**, previous total jobs on 23 farms in 2015
- **171**, new direct jobs created in 2016 (this equates to **38%** of the **450 jobs** projected in 2016).
- **85 jobs** from **3 new projects** in 2016 (Karoo Catch, Salmar Trading, Aquafoods).

Disaggregated jobs (of total jobs on farm):

- Gender: **Females (502)**
- Ages: **Youth (830) 46%**
- Race: **African black (1093) 61%; Coloured (558) 31%; White (154) 8.6%; Indian (1) 0.06%**
- **Disabilities (15) 1%**
- **Veterans (1) 0.05%**

The total jobs for the sector was 4448 (622 additional new jobs in 2016)

2016 PROJECTED

An additional **450** direct jobs.

1.3 HIGHLIGHTS PER INITIATIVE

Priority initiatives identified by the aquaculture lab to support the implementation of catalyst projects



1 **Selection and Implementation of Catalyst Projects**

Since the Lab in 2014, seventeen (17) new projects have been assessed and incorporated as part of Operation Phakisa Oceans Economy. In total there are thirty-six (36) projects. Fifteen (15) of these projects are considered SMME's and twenty six (26) of these projects are producing farmed aquaculture animals

2 **Legislative reform**

The Aquaculture Development Bill was signed off by the National Economic Development and Labour Council (NEDLAC). The Bill is due to be presented at Cabinet in early 2018. Strategic Environmental Assessment: Suitable areas have been screened and reviewed by key stakeholders through consultative workshops.

3 **Inter-departmental authorisations committee**

The numerous authorisations required for aquaculture have been mapped in detail and recommendations have been made in terms of streamlining and further improving efficiency.

- 4 Environmental Impact Assessments (EIA) were approved, 2 appeals were completed.
- 4 coastal discharge permits were issued.
- 3 biodiversity risk assessments were completed (Barramundi, Coho and King Salmon).
- 6 marine aquaculture permits/rights were issued or amended.
- All relevant permits to undertake the pilot trout project in Vanderkloof Dam in the Northern Cape were issued.

4 **Globally recognised monitoring and certification system**

The EU Residues and Public Health Audit Welcoming Meeting came to SA to audit the agricultural and the aquaculture sector. Compulsory specification for live and chilled raw bivalve molluscs was gazetted in October 2017.

Regulations



5 **Aquaculture development fund**

The working group is considering funding applications and a memorandum of co-operation between funding departments and institutions is to be finalised. The Aquaculture Development Fund model and mechanism were completed in March 2017.

Funding



6 **Capacity building and skills development for support services**

The department has sent five provincial vets to the University of Stirling for a one year Masters in Aquatic Medicine. A skills and needs analysis assessment of the sector is currently underway to inform further interventions and skills requirements.

Skills



7 **Coordinated industry-wide marketing efforts**

The first international conference and exposition of the World Aquaculture Society (WAS) was held on the African continent at the Cape Town International Convention Centre 26-30 June 2017. New markets have been explored and interest has been received from: Iran for tilapia; China (Taiwan) for farmed oysters and Europe for finfish and abalone.

Market



1.4 YEAR THREE REVIEW

The first Initiative (1) covers the "Selection and Implementation of 24 Catalyst Projects." This initiative is divided into three phases in order to increase the scale of the aquaculture sector. The projects comprise of both new farms and the expansion of existing farms. This reporting period is based on phase three.

OVERVIEW OF INITIATIVES



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




-  Implementation of 9 initial projects
-  Establishment of an Inter-Departmental Authorisations Committee
-  Establishment of an Aquaculture Development Fund
-  Coordination of industry-wide marketing efforts

Phase 2: Implementation of initiatives in 12 to 24 months

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

Phase 3: Implementation of initiatives in 2 to 4 years

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

-  Initial short-term targets
-  Implemented
-  Underway

PROGRESS: INITIATIVE 1 - SELECTION AND IMPLEMENTATION OF CATALYST PROJECTS

Since the Lab in 2014, seventeen (17) new projects have been assessed and incorporated as part of Operation Phakisa Oceans Economy. In total there are thirty-six (36) projects. Fifteen (15) of these projects are considered Small, Medium and Micro-sized Enterprises (SMME's) and twenty six (26) of these projects are producing farmed aquaculture animals. Five (5) of the original twenty-four (24) projects have been put onto business opportunities due to various reasons from unsuitable water quality (low oxygen) to land claims. Furthermore there are nine (9) projects under assessment to be included into Operation Phakisa.

In summary, the delays and challenges experienced by projects include funding and investment; lease of land and sea space; timeframes for environmental authorisations and stock theft for abalone ranching projects.

★ PHASE 1
(6-12 MONTHS IMPLEMENTATION)

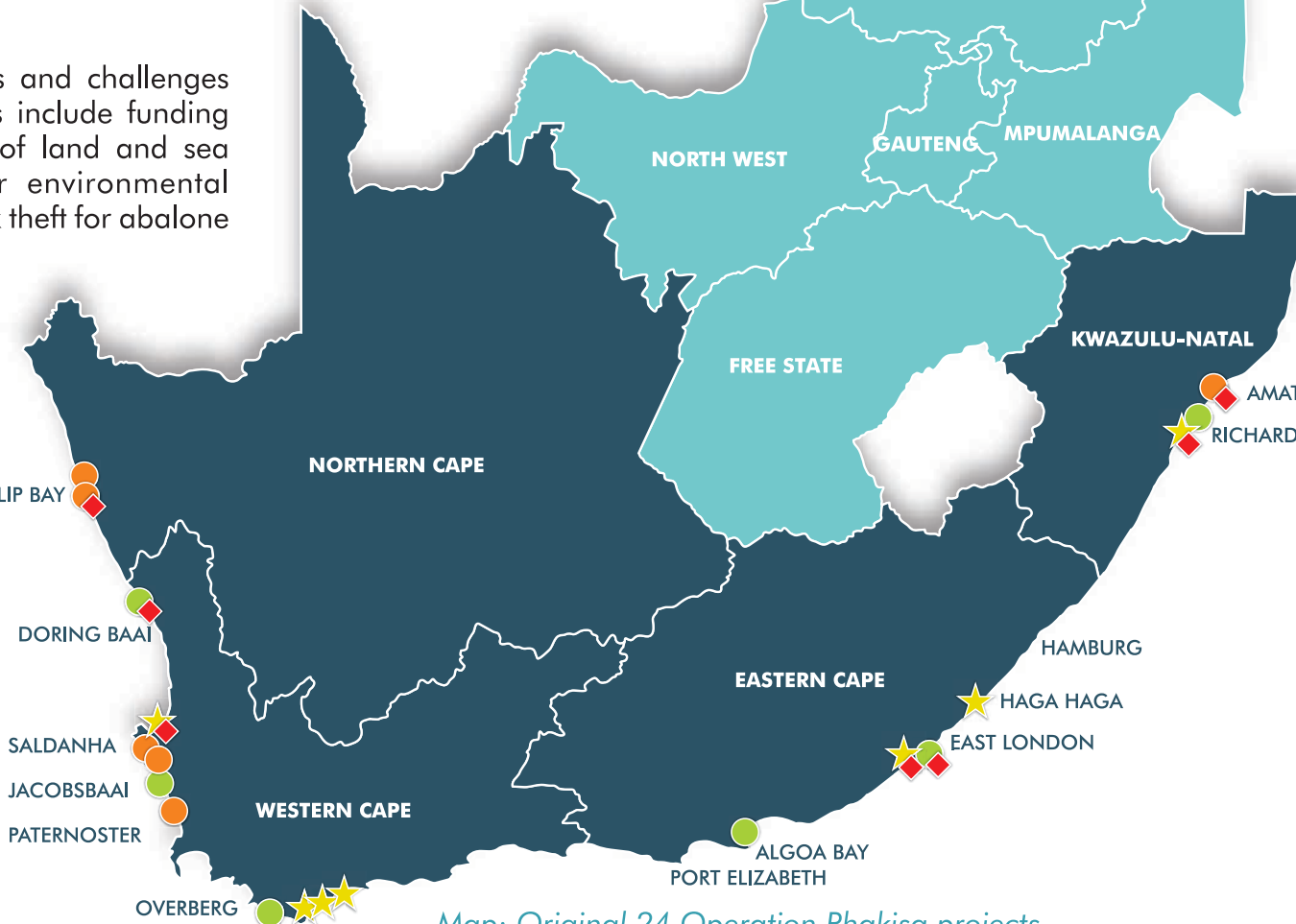
● PHASE 2
(12-24 MONTHS IMPLEMENTATION)

● PHASE 3
(2-4 YEARS IMPLEMENTATION)

◆ SMME'S (15+)

■ COASTAL PROVINCES

■ INLAND PROVINCES



Map: Original 24 Operation Phakisa projects

5 projects removed, placed onto business opportunities
Ventersdorp Catfish, ADZ Ventersdorp, Algoa Bay Yellowtail, Oceanwise ELIDZ and Southern Atlantic

HONDEKLIP BAY

- New Farm: Diamond Coast Abalone Ranching (Abalone)
- Expansion of DST Abalone hatchery

DORING BAAI

- Expansion of Doring Bay Abalone

PATERNOSTER

- ★ Expansion of Paternoster hatchery (Oysters)

JACOBSBAAI

- Expansion: Jacobsbaai Sea Products (Abalone)

SALDANHA BAY

- New farm: Molapong Cages (Ocean Trout)
- Expansion of Blue Ocean Mussels
- Expansion of Saldanha Bay Oyster

RICHARD'S BAY

- New farm: Richard's bay Sea Cage farming (Dusky kob)

AMATIKULU

- ★ Expansion of Amatikulu ornamentals
- New farm: Amatikulu Kob (ADZ)

HAGA HAGA

- ★ Expansion: Wild Coast Abalone farm (Fish)

HAMBURG

- ★ Expansion of Hamburg Oyster farm
- New farm: Hamburg Kob

PORT ELIZABETH

- New Wild Coast Abalone ranching

OVERBERG

- ★ Expansion of Roman Bay (Abalone)
- ★ Expansion of Abagold (Abalone)
- Expansion of Marine Growers (Abalone)
- ★ Expansion of HIK Abalone

LOCATION AND SPECIES OF 17 NEW AQUACULTURE PROJECTS SINCE 2014

KLEINZEE

- Expansion: Really Useful Investments (Abalone)

SALDANHA BAY

- Expansion: Blue Sapphire Pearls (Mussels)
- Expansion: Imbaza Mussels
- Expansion: African Olive Trading (Mussels)
- Expansion: Aqua Foods SA (Mussels & Oysters)
- New: Requa Mussels
- New: Chapmans Mussels
- New: Xesibe (Mussels)
- Expansion: Salmar Trading (Mussels & Oysters)
- New: Oystercatcher (Oysters)
- New: Southern Atlantic Sea farms (Mussels)
- Expansion: West Coast Oyster Growers (Mussels & Oysters)
- Expansion: West Coast Aqua (Mussels)

GAUTENG

- New: Northdene (Vaal Fisheries) tilapia

GRAAF RENIET

- Expansion: Karoo Catch (Cattfish)

PORT ELIZABETH

- Expansion: Zwembesi (Oysters)

HERMANUS

- New: Hermanus Salmon

■ COASTAL PROVINCES

■ INLAND PROVINCES

★ PHASE 1
(6-12 MONTHS IMPLEMENTATION)

● PHASE 2
(12-24 MONTHS IMPLEMENTATION)

● PHASE 3
(2-4 YEARS IMPLEMENTATION)

◆ SMME'S (15+)

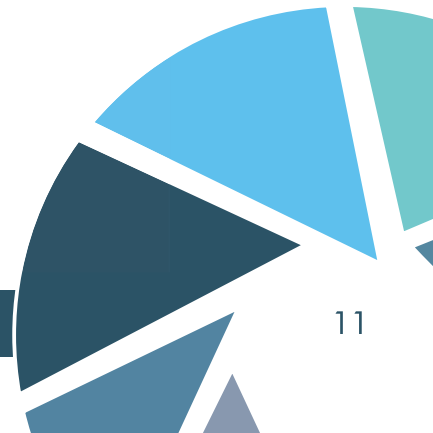
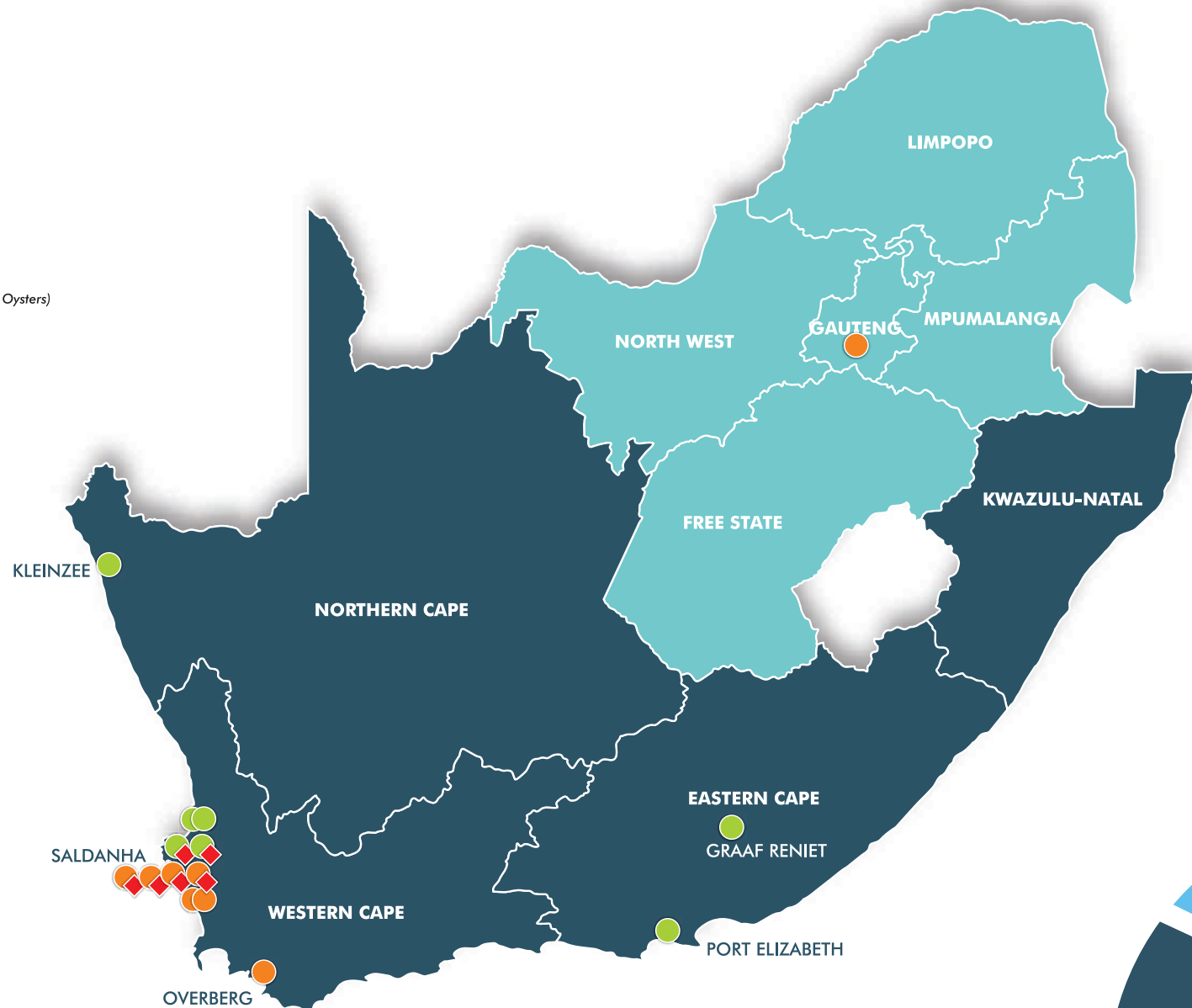



Table 1: Potential production and job creation by 2019 of the 17 new projects that have been fully incorporated into the Operation Phakisa Aquaculture work stream.

PROJECT NAME	LOCATION		POTENTIAL PRODUCTION BY 2019	POTENTIAL JOBS BY 2019
West Coast Oyster Growers	Saldanha Bay	WC 	160 tons mussels additional/80 tons of oysters additional	30 jobs on farm
Blue Sapphire Pearl	Saldanha Bay	WC 	50 tons oysters additional/90 tons mussels additional	30 jobs on farm
Imbaza mussels	Saldanha Bay	WC 	200 tons additional	22 jobs on farm
African Olive Trading 232	Saldanha Bay	WC 	600 tons	15 jobs on farm
Really Useful Investments	Kleinsee	NC 	100 tons	45 jobs on farm
Aquafood SA	Saldanha Bay	WC 	282 tons	35 jobs on farm
Salmar Trading	Saldanha Bay	WC 	400 tons	15 jobs on farm
Karoo Catch	Graaf-Reinet	EC 	1786 tons	438 jobs on farm
West Coast Aqua	Saldanha Bay	WC 	250 tons	20 jobs on farm
Oyster Catcher	Saldanha Bay	WC 	1075 tons	78 jobs on farm
Chapmans Aquaculture Company	Saldanha Bay	WC 	1 000 tons	11 jobs on farm
Requa Enterprises	Saldanha Bay	WC 	1 000 tons	11 jobs on farm
Southern Atlantic Seafarm	Saldanha Bay	WC 	1000 tons	12 jobs on farm
Hermanus Salmon	Hermanus	WC 	500 tons	150 jobs on farm
Northdene (Vaal Fisheries)	Van der Byl park	GP 	1950 tons	31 jobs on farm
Xesibe aquaculture	Saldanha Bay	WC 	1000 tons	11 jobs on farm
Zwembesi Farm	Port Elizabeth	EC 	220 tons	42 jobs on farm

PROGRESS: INITIATIVE 2 - LEGISLATIVE REFORM TO PROMOTE AQUACULTURE DEVELOPMENT

Currently, the legislative framework governing aquaculture activities is fragmented and regulated by various departments as aquaculture occurs across sea, land and fresh water. Initiative 2 looks at `Legislative Reform` which aims to amend legislation to streamline the assortment of existing regulations and creates an enabling environment to promote aquaculture sector growth.

Several steps have been taken towards the legislative reform to promote aquaculture development.

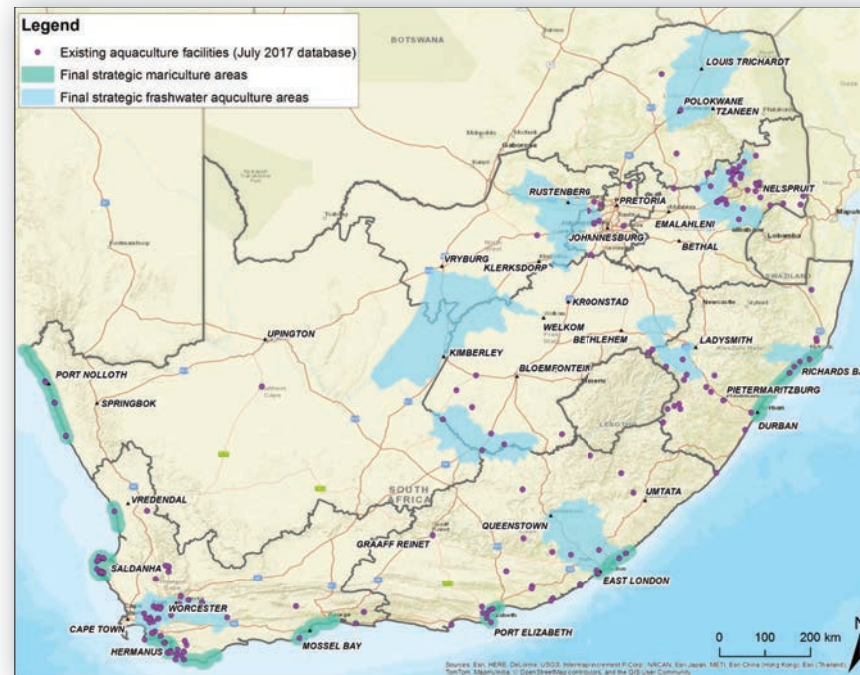
Aquaculture Development Bill

The 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.

Aquaculture Strategic Environmental Assessment (SEA)

The purposes of the SEA are to identify suitable areas where environmentally sustainable aquaculture development can be prioritised and incentivised. Secondly, it will provide a streamlined and integrated management and regulatory framework to reduce compliance complexities and improve decision-making processes. Suitable areas have been screened and reviewed by key stakeholders through consultative workshops, see figure 1 below. These areas are being assessed in more detail by various specialists to refine the areas, determine risks and inform key management and standards to be implemented.

Figure 1: Areas screened through the SEA process.



Coastal Discharge Permits:

The General Discharge Authorisation (GDA) for coastal discharges, which includes aquaculture, is aimed at reducing the need for aquaculture operations to apply for a full Coastal Water Discharge Permit which required various specialist studies. The project is delayed due to significant amendments required to the draft GDA. The internal approval process prior to gazetting for comment had to be redone entirely.

Mapping and regulations of trout:

Maps indicating the presence or absence of trout in each province according to the best available information was drafted however the maps and regulations are still to be finalised. Subsequent to the mapping process, the DEA received legal opinion from the Office of the Chief State Law Adviser which impacted on the mapping and regulations of trout. In terms of Nile tilapia, a task team has been set up between industry, national government and the provinces to discuss the way forward.

Norms and standards:

Norms and standards for abalone were gazetted for comment in February 2016 but will most likely be incorporated into the SEA process.

PROGRESS: INITIATIVE 3 - ESTABLISHMENT OF INTERDEPARTMENTAL AUTHORISATION COMMITTEE

Initiative 3 covers the establishment of an 'Inter-Departmental Authorisations Committee' (IAC) which will streamline and coordinate applications and approvals in the aquaculture sector. 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.

The numerous authorisations required for aquaculture have been mapped in detail and recommendations have been made in terms of streamlining and further improving efficiency.

Achievements since October 2014:

- Four Environmental Impact Assessments (EIA) were approved, two appeals were completed.
- Four coastal discharge permits were issued.
- Three biodiversity risk assessments were completed (Barramundi, Coho and King Salmon).
- Six marine aquaculture permits/rights were issued or amended.
 - All relevant permits to undertake the pilot trout project in Vanderkloof Dam in the Northern Cape were issued.
 - Qolora Aquaculture Development Zone (ADZ) received the following approval/authorisations but still requires the coastal lease and extension on the EIA:
 - The water usage license was approved for Qolora ADZ
 - The Power of Attorney for the land was received by the Department of Rural Development and Land Reform

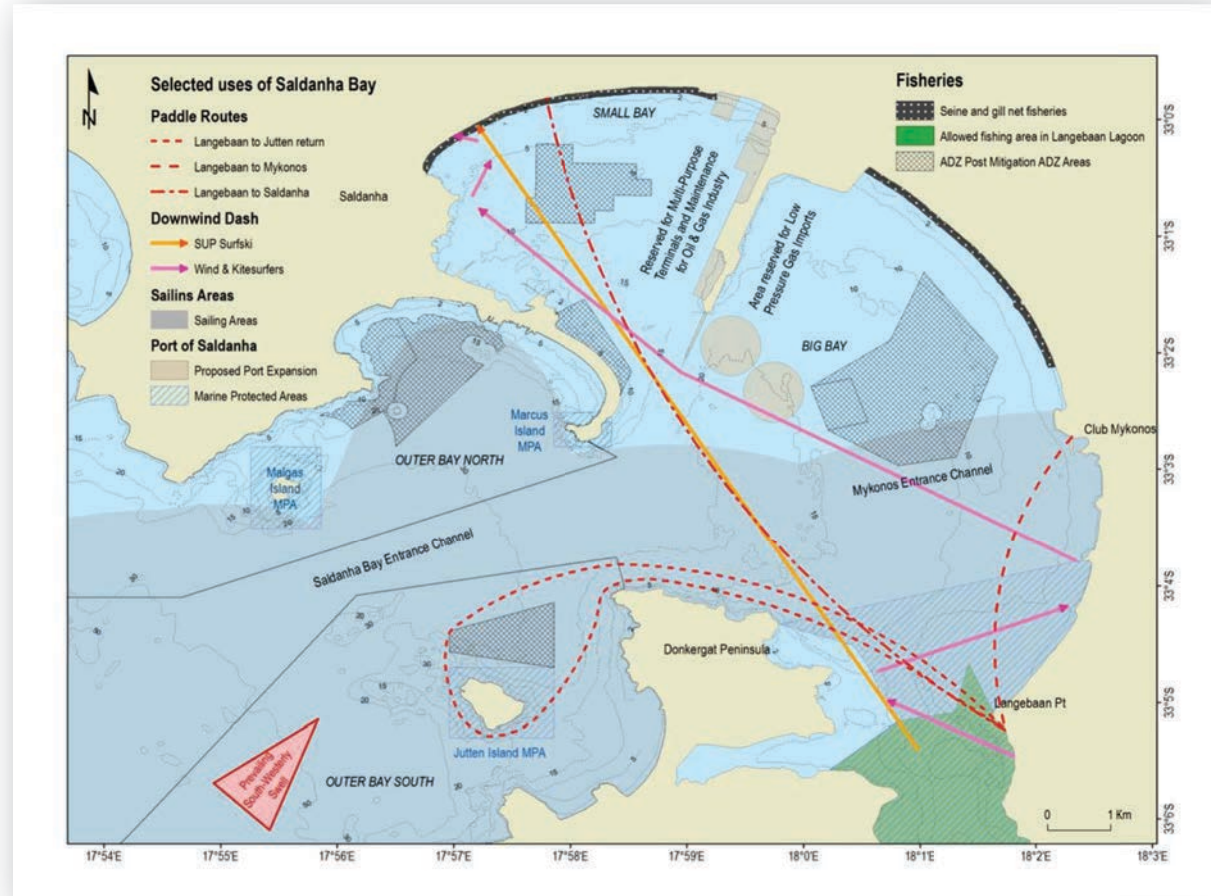
- DAFF is currently undertaking Environmental Impact Assessments to create an enabling environment and facilitate investment for:
 - Saldanha Bay ADZ, see figure 2
 - Amatikulu ADZ, see figure 3

SALDANHA BAY AQUACULTURE DEVELOPMENT ZONE

Figure 2: Saldanha Bay ADZ EIA

Potential Benefits:

- The Saldanha Bay Aquaculture Development Zone has the potential to unlock an additional of 780- 2500 direct jobs, over R400 million investments and over R800 million turnover 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.



AMATIKULU AQUACULTURE DEVELOPMENT ZONE



Figure 3: images showing the proposed layout of the Amatikulu ADZ as well as the current infrastructure on the site

This site is considered to have good access to the necessary transportation services for the delivery of feeds and other material and to ensure access to domestic and export markets. Due to the proximity of the site to Durban, the development could potentially be attractive to investors, skilled labour, trade and security. The rural area is quite large and the prospects for rural development is high. The land for the ADZ was secured through a community resolution and the formulation of a Macambini Traditional Council. The ADZ covers an area of 108 hectares.

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

Importing nations require health assurances that the products they receive are safe for consumption, however, in South Africa there are currently only a few trained technicians and specialists and too little funding allocated to aquaculture and testing facilities are few and far in between. To address this, Initiative 4 is an enabler to establish a 'Globally Recognised Monitoring and Certification System' to boost exports of South African aquaculture products.

The DAFF and National Regulatory for Compulsory Standards (NRCS) service level agreement to undertake independent food safety sampling was signed and is being implemented.

As follow up to the fact finding mission in February 2016, the European Union (EU) Residues and Public Health Audit team came to South Africa to audit the agricultural and the aquaculture sector. Meetings were held from 14-24 February 2017.

Compulsory specification for live and chilled raw bivalve molluscs was gazetted in October 2017. This follows the development of the standard and will allow for certification and further export of the product.

PROGRESS: INITIATIVE 5 - ESTABLISHMENT OF AN AQUACULTURE DEVELOPMENT FUND

Initiative 5, looks at the 'Aquaculture Development Fund,' which aims to establish an integrated pool of existing funds in order to finance all phases of aquaculture projects (including pre-production) and encourage new entrants to participate in the aquaculture sector.

The ADF Working Group is made up of the following key Development Funding Institutions (DFI's) and departments:

Agriculture, Forestry and Fisheries: Comprehensive Agriculture Support Programme and Mafisa; Industrial Development Corporation (IDC); Land Bank; Eastern Cape Development Corporation (ECDC); Eastern Cape Rural Development Agency (ECRDA); Science and Technology; Jobs Fund; National Empowerment Fund; Trade and Industry and Small Business Development.

The working group is considering funding applications and a memorandum of co-operation between funding departments and institutions is to be finalised. The first financial feasibility studies have been conducted on key aquaculture species (shellfish and marine finfish) to inform private and government investment as well as incentives and policy interventions.

Further feasibility studies are underway for abalone, catfish, Nile tilapia, Mozambique tilapia, trout, catfish, marron and marine and freshwater ornamentals.

Key recommendations of the feasibility reports for shellfish and marine finfish included:

- 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)

The Aquaculture Feasibility Studies and Aquaculture Funding Directory can be obtained from the following links below:

Feasibility studies: <http://www.daff.gov.za/daffweb3/Branches/Fisheries-Management/Aquaculture-and-Economic-Development/Aquaculture-Feasibility-Studies>

Funding Directory: <http://www.daff.gov.za/daffweb3/Branches/Fisheries-Management/Aquaculture-and-Economic-Development/Aquaculture-Technical-Service/Aquaculture-Economics>

Aquaculture Development Fund Model

The Aquaculture Development Fund model and mechanism was completed in March 2017. The model noted below was considered to be the most viable option:

Model: Establish a Virtual Aquaculture Development Fund through:

- A. A focused and capacitated Secretariat to the ADF Working Group
- B. An electronic portal where the information technology platform enables a coordinated application to different financing institutions
- C. Working with the dti, TIA and the IDC for TIA to launch a specific call for funding directed towards the broader aquaculture sector or specific sub-sectors with the aim of Growing the Industry, drawing on internal financing and leveraging IDC co-financing, bringing in domestic and where required international technical expertise to evaluate technologically complex funding proposals
- D. Working with the dti, the Land Bank and different units within DAFF to redesign financing instruments to drive transformation and inclusion of black emerging aquaculture farmers into the aquaculture sector, inclusive of CASP, Mafisa and a coordinated Land Bank/ DAFF loan financing to emerging aquaculture farmers
- E. Working with aquaculture stakeholder groups, the commercial fishing industry and private financing institutions to promote transformation in the sector and providing increasing access to the sector for emerging and bigger entrepreneurs alike

Other parallel departmental initiatives include:

1. Adjust the Aquaculture Bill taking into account the objectives and mechanisms contained in the Virtual ADF Memorandum of Cooperation
2. Explore possibilities of reducing regulatory complexity and uncertainty through e.g. the Interdepartmental Authorisation Committee
3. Reduce production risks related to disease and toxicity control through high levels of consistent science-based monitoring and testing as well as access to appropriate laboratory facilities, regular monitoring and testing of water quality, and consistent energy supply

PROGRESS: INITIATIVE 6 - CAPACITY AND SKILLS DEVELOPMENT

There is currently a lack of certified vocational training for basic aquaculture farming skills. In addition, aquaculture as an emerging sector has almost no dedicated and specialised extension officers; state vets specialised in aquaculture and research officers at a provincial and at the national level within DAFF. Initiative 6 covers 'Capacity Building and Skills Development for Support Services.'

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 the National Skills Fund within the DHET (Department of Higher Education and Training) 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 September 2017 for one year.

The **Gariiep Dam Aquaculture Training Centre** was officially been handed over to South Africa in June 2017 and conducted training for:

- 385 farmers/students
- 534 visits/tours
- 25 interns

PROGRESS: INITIATIVE 7 - COORDINATION FOR INDUSTRY WIDE MARKETING EFFORTS

Initiative 7 seeks to launch 'Coordinated Industry-Wide Marketing Efforts' to increase local consumption of aquaculture products and to encourage the growth of small-scale farmers and new entrants. The coordination of industry wide marketing efforts is under way in order to reduce duplicative efforts and resources.

Various industry associations were engaged to undertake joint market access & research; market & product development and consumer and public awareness initiatives.

New markets have been explored and interest has been received from:

- Iran for tilapia
- China (Taiwan) for farmed oysters
- Europe for finfish and abalone

In terms of product development 'Cattfish boerewors' was developed by the Karoo Catch project and is available at selected Spar supermarkets.

The first international conference and exposition of the World Aquaculture Society (WAS) was held on the African continent at the Cape Town International Convention Centre from 26-30 June 2017. The conference was co-organised 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

PROGRESS: INITIATIVE 8 - PREFERENTIAL PROCUREMENT OF AQUACULTURE PRODUCT

Preferential procurement can create local markets while contributing towards transformation and food security in South Africa. Initiative 8 is 'Preferential Procurement' which seeks to partner with government institutions to procure aquaculture products, thereby increasing local consumption and improving nutritional levels in South Africa. The importance of investigating preferential procurement further was again highlighted in the financial feasibility studies conducted for dusky kob and other species. Research on the current fish consumption of state owned entities and departments are currently underway.

2. YEAR THREE SNAPSHOT

2.1 PROJECT PROGRESS HIGHLIGHTS

Highlights from Operation Phakisa aquaculture projects during the reporting period:



African Olive Trading harvesting mussels at the farm



Molapong trout sea cage feeding



Kob at Richard's Bay cage culture project transferred onto ice



Molapong Ocean Trout



Richard's Bay Kob cage farm harvest underway

A. DEPARTMENT OF SCIENCE & TECHNOLOGY /STELLENBOSCH UNIVERSITY: KOB FARM IN RICHARDS BAY

The DST KZN Aquaculture Development Project is a collaborative undertaking between the Department of Science and Technology (DST), the Department of Agriculture, Forestry and Fisheries (DAFF) and the Stellenbosch University to determine the technical, environmental and financial feasibility of farming dusky kob in sea cages in Richards Bay in KwaZulu-Natal. The pilot project was funded by DST and production commenced in August 2015 with an initial stocking of 25 000 dusky kob fingerlings. A second batch of fingerlings was stocked in January 2016. The project was accepted as an Operation Phakisa project in 2014.

The purpose of the pilot project is to evaluate dusky kob growth rates, feed conversion ratios and fish survival under commercial sea cage culture conditions and to ultimately contribute to the establishment of a full commercial dusky kob sea cage farm and hatchery in Richards Bay. The dusky kob life cycle has been closed and the species appears to be well suited to marine aquaculture, as it grows fast, has a good yield, and are tolerant of a wide range of temperature and salinity conditions. The pilot project involves the grow-out of a single batch of fish to a targeted weight of 1.5 kg. The estimated production during the pilot project is 60 tons (over a 14 month period), with cultured fish being processed and marketed to determine routes to market. The fish is being grown in 50m circumference cages deployed at a near shore site in the Richards Bay harbour. The cage system consists of four surface gravity type fish cages moored in a 4 x1 drag embedment anchor based mooring grid. Rigorous environmental monitoring is being conducted by an independent environmental practitioner with oversight from DAFF.

During this period, a total of 22 tons of the first market size dusky kob was harvested in Richards Bay in June/July 2017. The fish size ranged from 1.1 to 1.6kg. Food safety criteria were tested and met. Market testing and analysis was completed on the harvested product.

B. AFRICAN OLIVE TRADING MUSSEL FARM IN SALDANHA BAY

Operation Phakisa helps mussel farm to break out of its shell

Not long ago, the African Olive Trading mussel farm in Saldanha Bay in the Western Cape struggled to compete with big players. It could only deploy a handful of rafts to farm mussels in a five-hectare sea space, and was struggling to access bigger markets to sell its mussels. But assistance from government, as part of Operation Phakisa: Oceans Economy has seen the mussel farm break out of its shell to enter the agro-processing space and is now supplying mussels to a wholesaler.

On Friday 23 June 2017, African Olive Trading, through its partner company, Gallo (Pty) Ltd, opened a new mussel processing plant in Velddrif, a small fishing coastal town which is 90 minutes away from Cape Town. Nolan Adams, the General Manager of African Olive Trading and chairperson of the Gallo Group, said Operation Phakisa was the “unlocking agent” that made them the biggest 100% black owned mussel farm in the country. “We sat with a scenario where we had five or six rafts. The bigger [companies] that had factories didn't want to buy our mussels,” Adams said. Despite all their hard work and their will to farm, they could not compete. Even though they had an existing contract with another processing plant at the time, they sometimes found themselves with tonnes of mussels that no one was willing to buy. “So we had to create this. That is where the idea came from. We were sitting with the mussels, we supplied

the fresh market but the fresh market does not take that much of mussels. They had to be processed,” Adams said.

Through the help of Operation Phakisa, African Olive Trading was allocated an additional five hectares of sea space in Saldanha's inner bay by the Transnet National Ports Authority. African Olive Trading now holds a 15-year lease on a 30-hectare sea space. “When we received the (additional) 25 hectares... we were in the big league. We could take the next step, we could dream big.” At this point, African Olive Trading's holding company established an entity, Gallo (Pty) Ltd, through which a mussel processing factory was built. This created a value chain, and instead of begging other processing plants to buy their mussels, African Olive Trading now sells its mussels to Gallo for processing and marketing.

Teaching the nation to fish

The farm is one of the 36 registered Operation Phakisa: Oceans Economy aquaculture projects, led by the Department of Agriculture, Forestry and Fisheries. African Olive Trading employs eight workers and the Gallo Group processing facility employs a total of 55 employees in Velddrif.

Adams said Operation Phakisa has helped the farm to receive government grants in the form of the Comprehensive Agricultural Support Programme in order to build more rafts on the farm. He said going forward, the goal is to add 19 more rafts and to purchase a boat by 2019. Once they have 30 rafts, the farm will have a projected produce of over 1 400 000 kg, or 1 400 tonnes, of mussels per annum. “The South African market consumes about 3 000 tonnes of mussel a year. If African Olive Trading farms 1 500 tonnes of mussels per annum, whenever you eat a mussel again, from every two mussels that you eat, one [will] come from us,” Adams said.

To motivate their employees, African Olive Trading provides a commission based remuneration, where 22% of the monthly turnover is paid as a salary to the workers in that specific month. This ensures that the entire team is working and benefits adequately. Adams said the company offers sustainable jobs. Farren Marcus, 21, one of the employees at the processing plant, said working at the plant has changed her life and financial outlook. Before she joined Gallo, she used to be a casual staffer for a year and a half at another mussel processing factory. The permanent job has given her stability and she is now able to save so that she can pursue a higher education course next year. “This job has made a big difference because I needed the money. I am going start studying next year,” she said. *Published on 25 June 2017 on www.sanews.gov.za*

C. MOLAPONG OCEAN TROUT SEA CAGE FARM IN SALDANHA BAY

The Molapong Ocean Trout sea cage farm in Saldanha Bay is one of only two marine finfish cage pilot farms in South Africa. In 2017, the project had 50 000 fish in its cages and planned to grow the fish to 2-3 kg each by the end of the reporting year. Through Operation Phakisa, the project was assisted with a water space lease from Transnet National Ports Authority (TNPA) and a marine right through the Department of Agriculture, Forestry and Fisheries. This project aims to produce 500 tons of ocean trout during phase one and up to 2000 tons of trout and salmon at phase three (2019) over a total area of 45 hectares. Molapong Aquaculture is currently the biggest producer of fresh trout in South Africa and the ocean trout and salmon products are aimed at extending their product offerings to their existing local customers, as well as having stock available to fill export orders.

2.2 INVESTMENT PROMOTION AND AWARENESS

A. DAFF SCOOPS AWARD FOR BEST EXHIBITION IN CHINA



The Department of Agriculture, Forestry and Fisheries South Africa were invited to exhibit at the China International Fishery & Seafood Expo (FISHEX) in Guangzhou China from the 25–27 August 2017 and walked away with an award for the best exhibition.

This was one of the largest expos that DAFF has ever attended which attracted a total of 418 enterprises from 16 countries and 30 domestic cities. There were 9 863 professional visitors from 63 international countries and regions and a total of 32 685 general visitors. The primary focus was to create a vantage point for professionals across a very broad spectrum of fisheries, with a strong emphasis on imports and exports and created a magnanimous market where international exhibitors and a host of other exhibitors in China could come together and forge new links.

DAFF's exhibition was mainly focused on aquaculture in South Africa (freshwater and marine) aligned to the national mandate of Operation Phakisa: Oceans Economy. Exciting visuals with a vibrant graphic display also included content about the South African fishing industry highlighting species such as hake, small pelagic, West Coast rock lobster and the small-scale fisheries sectors. There was also a variety of aquaculture and marine models on display to showcase the various fisheries products available in South Africa.

The DAFF stand attracted a huge interest from professional traders and fish market owners who had shown interest to import seafood products from South Africa. Interest centred on importing fishmeal, West Coast rock lobsters, abalone, oysters, mussels, fresh water crayfish and hake. On the third day, Arno Munro from the Communications unit and Masuping Mofokeng from Aquaculture and Economic Development, who represented DAFF at the exhibition, were invited to the Royal Banquet gala evening hosted by the organisers of the event. Surprisingly DAFF walked away with the best prize for its innovative exhibition display at this grandiose expo. The expo achieved its objectives in establishing a platform for showcasing fisheries on a very large scale, strengthening negotiation and exchange of information. This expo has shown high-quality products; international advanced technology; publicised global brand enterprises and increased co-operation between overseas countries and China, they played an important role for global fishery enterprises, processing enterprises and traders which helped them to enter the Chinese fishery market and expand international market shares.

B. WORLD AQUACULTURE CONFERENCE PUTS A SPOTLIGHT ON AFRICA



The Department of Agriculture, Forestry and Fisheries (DAFF) in partnership with the World Aquaculture Society (WAS) and the Aquaculture Association of Southern Africa (AASA) hosted a World Aquaculture conference, Cape Town International Convention Centre from 26 to 30 June 2017. The first international conference and exposition of the WAS, was held on the African continent for the first time in the African soil. Aquaculture continues to be the fastest growing food sector and it is recognised as the most viable alternative to meet the growing demand for aquatic food. Operation Phakisa also forms part of the country's Nine Point Plan to reignite growth and boost job creation, as announced by the President during the State of the Nation Address earlier this year. The World Aquaculture conference was aimed at providing annual presentation, exchange and discussion of information, findings and experiences on all subjects and techniques related to aquaculture sector.

DAFF Minister Senzeni Zokwana addressed delegates and on his address he pointed out that the South African aquaculture industry just like the rest of Africa is still emerging and thus the production levels currently remain low. However " We, in South Africa believe that if interventions identified to grow the sector under Operation Phakisa are implemented successfully as the case to date, aquaculture projects will continue to grow significantly and our target is to have grown the sector by five fold in the next five years since the inception of the programme", he said. The 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. The delegates comprised of scientists, policy-makers, investors, donors, academics and manufacturers of technology and equipment. The event is an annual international conference and exposition of the World Aquaculture Society (WAS) and was adequately themed 'Sustainable Aquaculture – New Frontiers for Economic Growth'.

The Deputy Director General of DAFF, Siphokazi Ndudane spoke on behalf of Deputy Minister Bheki Cele in absentia. Ndudane spoke in support of increased investment, research and co-operation in the field of aquaculture in Africa. "I am confident that this will be experienced through various interactions for the duration of the week, bringing together Pan-African and global stakeholders who will contribute to advancing aquaculture agenda globally, and specifically on the continent." said Ndudane.

During the conference the African chapter of WAS was launched. The formation of a WAS African Chapter is a great initiative to combine efforts and collaborate with African colleagues. It aims to provide a platform for professionals to debate issues and exchange ideas; provide support for sustainable aquaculture research and development efforts. The World Aquaculture Conference attracted wide sponsorship and support from African development institutions including DAFF, FAO the African Union and NEPAD, and the World Fish Centre. Looking at the attendance of WAS we are confident that the deliberations will help advance the aquaculture sector.

3. ADVERTISEMENT: A CALL FOR NEW PROJECTS

The Department of Agriculture, Forestry and Fisheries hereby invite current and new aquaculture project owners to register their projects to become part of Operation Phakisa: Unlocking the Economic Potential of South Africa's Oceans. Projects may be submitted any time however evaluations for inclusion will be conducted on a quarterly basis. Evaluation criteria are listed below or please refer to the Aquaculture Lab report in the link below.

The benefits of including your aquaculture project onto the Operation Phakisa programme:

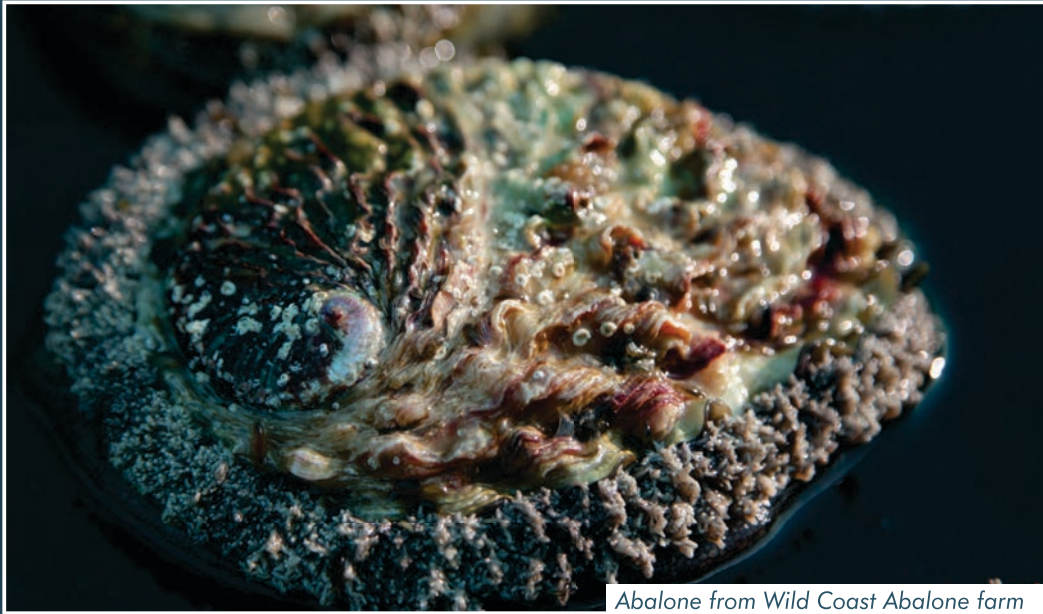
- Contributing towards the Operation Phakisa aspirations in growing the sector, job creation, transformation and GDP contribution
- Phakisa projects are prioritised and assistance is available with unblocking bottlenecks
- Project will be exposed to potential investors if funding is required
- Projects will be profiled and presented at local and international events
- Progress is monitored and reporting is publicly available to ensure transparency and accountability



BBBEE REQUIREMENTS ON APPLICATION:

- The minimum **BBBEE** required is **level 4**
- **25% BBBEE** ownership for existing projects
- **50% BBBEE** ownership for new projects (greenfields)

For more information on the criteria and application requirements, interested parties must refer to the **New Projects** folder available on the Operation Phakisa website: www.operationphakisa.gov.za/operations/oel/aquaculture/
All applications and enquiries can be forwarded to: Aquaculturephakisa@daff.gov.za or call Ms Bongiwe Gxilishe on 021 402 3322.



Abalone from Wild Coast Abalone farm



Storing grown out abalone



Dusky kob at Hamburg Aquaculture project



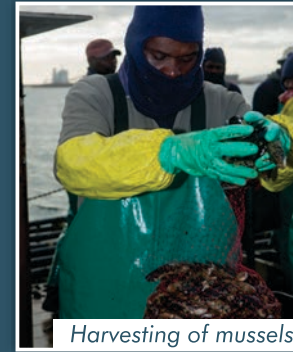
Abalone hatchery



Sorting of abalone



Sorting mussels at Blue Ocean Mussels Factory



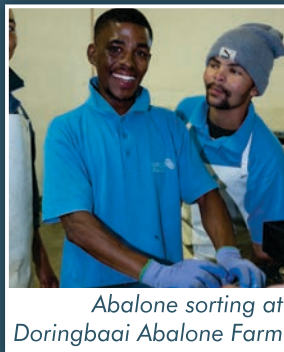
Harvesting of mussels



East Coast Rock lobster



Half shell mussels



Abalone sorting at Doringbaai Abalone Farm



Seaweed algae feed for abalone



Abagold farm in Hermanus

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