

Pooling knowledge areas for aquaculture startups in SA's Aquaculture Development Zones

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Background Data , (SAMEC, Daff, 2017)

Global aquaculture industry produces ~67 MT, with SA contributing **0.00003%** of global production

In 2012 globally 50/50 split of wild caught and farmed fish compared to **0.8%** from aquaculture farms in SA

China 62%, India 6%, Indonesia 5%, **Vietnam 5%, Thailand 2%**

Aquaculture contributes ~R 0.7 bn (0.2%) to South Africa's GDP in 2013

What species to focus on: **Inclusive sector approach** includes fresh water and marine; plant and animal species

??? off- shore, on-shore, pump-ashore, caged or is aquaculture not an option **???**

Obtained from Operation Phakisa aquaculture lab process

Fragmented R&D, small pool of skills pool, rural infrastructure, scale, governance, supply chain, pricing of risk

"...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..."

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 be commercially viable

These provide indicators of NMU's research areas in the transdisciplinary research theme:
Facilitating aquaculture operations

Solutions and changed landscape through the Operation Phakisa Lab process and three foot plans

Fast tracking: Process for 35 Projects of which 25 are in production.

Some projects are experiencing challenges around funding, water leases, land leases and authorisations

Legislative reform: To promote aquaculture development: Interdepartmental functioning for approvals; and the Aquaculture Development Bill

**Over five years
in three
phases**

CSIR role: Appointed to undertake the Strategic Environmental Assessments (SEA): identify where environmentally sustainable aquaculture development can be prioritised and incentivised.

Catalytic Approach: Project selection, Globally recognised monitoring and certification system; and the Aquaculture Development Fund

NMU adding value to opportunities in Aquaculture Development Zones (ADZs)

Prioritization: Algoa Bay and Qolora ADZs; within the Coega and East London IDZ thus comprising four of the seven ADZs

Addressing feasibility factors: Location & size, targeted species, current status, potential production and job creation, progress and challenges

Value-adding efficiencies: minimizing the cost of infrastructure and obtaining EIA's due to the economies of scale; providing extension services such as skills, vets; and the marketing and investment effort

Nationally the priority is to learning from the existing and contributing to future industry

Notes from Press Release on 11 September 2015. One of 24 aquaculture projects which are part of Operation Phakisa: Ocean's Economy.

First harvest of Kob / Kabeljou. Total weight of the batch 277 kg, average individual weight of 1,1kg.

Two hectare pilot farm in Hamburg, 60km from East London with 20 tons of dusky kob capacity per annum

Through industry partnership with Oceanwise (Pty) Ltd in East London IDZ; customer is the franchise group Cape Town Fishmarket

Another key NMU research area is in learning from the success and capability of the current globally successful aquaculture operations in SA

NMU's role in an aquaculture platform

DAFF, OP sites and the **value chains** involved

ECDC, CDC for the **business specs**

Provincial govt: OTP, Agri-RD, Econ Dvlpt for the **skills profile**

NMU entities impacted on: BES, Science, Agriculture, Aquaponics, Arts, Bayworld, Missionv..

Co-locate research and industry partners on Ocean Sciences Campus along the **designated Research Theme and research areas**

Fresh water and marine species

Secure sustainable resourcing model and fundraising initiatives through partnerships

Industry, national entities: depts, CSIR, NRF< Warer Comm, HE partnerships for the sites concerned

Quadruple helix for the **businesses** and **communities** impacted on

Appreciation expressed

- Ms Lisa Geswindt for the presentations from DAFF and the Operation Phakisa lab; 2014, 2016 and March 2017
- The participants in NMU's Multidisciplinary Aquaculture Roundtable where the contributions raised the host of complex factors to be explored in the discussion on NMU's possible role in aquaculture operations
- CMR for the opportunity to contribute to NMU's possible research areas in the transdisciplinary research themes currently being developed in the context of the quadruple helix in NMU's Ocean Sciences