

National SEA for Aquaculture Development in South Africa
Meeting Notes

National Strategic Environmental Assessment for Aquaculture
Development in South Africa

Focus Group Meeting #2

Date: 03 October 2016

Venue: NCPC Training Room, CSIR Pretoria

Focus areas: Gauteng, Free State, Limpopo and North West

Attendees

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Apologies / Invited but did not attend

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List of acronyms

AASA	Aquaculture Association of South Africa
ADZ	Aquaculture Development Zone
ARC	Agricultural Research Council
COGTA	Cooperative Governance and Traditional Affairs
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
FS DARD	Free State Department of Agriculture and Rural Development
GA	General Authorisation
GDARD	Gauteng Department of Agriculture and Rural Development
IDC	Industrial Development Corporation
LEDET	Limpopo Department of Economic Development, Environment and Tourism
MTPA	Mpumalanga Tourism and Parks Agency
NRC	National Research Council
NW DREAD	North West Department of Rural, Environment and Agricultural Development
NWA	National Water Act 36 of 1998
NWU	North West University
RU	Rhodes University
SA	South Africa
SADC	Southern African Development Community
SALGA	South African Local Government Association
SANBI	South African National Biodiversity Institute
SPCA	Speak, Protect and Care for Animals
TSA	Trout South Africa
UL	University of Limpopo
UP	University of Pretoria
WRC	Water Research Commission
WULA	Water Use License Application

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1. Overview of Aquaculture SEA – approach, objectives, scope, key outputs & stakeholder engagement

- Presentation by Lizande Kellerman (CSIR)
- Catherine Greengrass (GAIA) asked what the terms ‘prioritise’ and ‘incentivise’ mean. She commented that these identified areas must not only be suitable from an environmental perspective, but also for supporting infrastructure, etc.
 - Paul Lochner (CSIR) responded stating that the scoping level assessment that forms part of the SEA will aim to coordinate the various authorisations and streamline the level of environmental assessment required by applicants.
- Etienne Hinrichsen (Aqua Eco) commented that processing and post-processing permits should also be considered in the SEA process.
- Heidi van Deventer (CSIR) asked about estimated timeframes of the SEA process. She also enquired whether, based on the literature review, aquaculture structures or the species pose the biggest risk or impact on the receiving environment.
 - Lizande Kellerman (CSIR) responded stating that the SEA is planned over an 18-month period with an estimated completion date in December 2017.
- Axel Tarrisse (Insect Protein) stated that the government should allow aquaculture to be developed without a permit up to 2 000 tonnes per year with regular inspections and ongoing monitoring of operations to ensure mitigation of negative impacts.
- Johan Theron (UL) commented that the biggest constraint for the aquaculture industry in SA is limited availability of freshwater.
- Etienne Hinrichsen (Aqua Eco) commented that SADC is developing aquaculture tools at a regional level upon which Asanda Njobeni (DAFF) responded asking Mr Hinrichsen to share a copy of this document with the SEA team.
- Millicent Solomons (DEA) commented that there are different branches within DEA e.g. Oceans and Coast, and representatives from all these branches should be included in the SEA stakeholder database, as well as relevant provincial representation.
 - Paul Lochner (CSIR) responded confirming that the SEA team is looking for a single entrance point into the various participating departments which can distribute communications about the SEA through the appropriate channels e.g. Simon Moganetsi for DEA.
- Valdi Pereira (TSA) suggested that SALGA be included on a local government level instead of COGTA.
- Ben Zaaiman (NWU) commented that the first question from funders of aquaculture development is usually whether an applicant has all the required authorisations in place. He provided a contact person at Land Bank, Mahindra Kara who can assist the SEA team in this regard. He also suggested that the SEA should provide feedback to funders in the industry.
- Andre Hoffman (MTPA) provided a contact person at the University of Pretoria, Dr. Johan Steyl to be included under Research in the SEA stakeholder database.

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- Based on further discussions about additions to the SEA stakeholder database, the following questions/comments were received from participating attendees:
 - Does the IDC play a role in the SEA process?
 - Lizande Kellerman (CSIR) responded stating that the IDC was contacted, but no response has yet been received.
 - Paul Lochner (CSIR) confirmed that financial/funding institutions are included on the SEA stakeholder database.
 - Asanda Njobeni (DAFF) commented that COGTA should be included under National Government in the SEA stakeholder database.
 - Johan Theron (UL) suggested that the SPCA should be participating in the SEA.
- The scope of species included in the SEA was discussed:
 - Johan Theron (UL) commented that ornamental fish farmers and pet shops, considered moneywise the biggest aquaculture industry in SA, are not represented on the SEA stakeholder database.
 - Michelle Pretorius (DAFF) commented that although the ornamental fish industry has a larger potential to distribute alien invasive fish species around the country than e.g. Tilapia, it is not possible to investigate all aquaculture species during the SEA process. Furthermore, there is a very wide range of ornamental species.
 - Johan Theron (UL) further commented stating that the financial gain from ornamental fish is much larger than from Tilapia of other food fish species e.g. Tilapia = R 46 per kg vs Ornamental fish = R 1 000 per kg. And ornamental fish are very efficient in terms of water use per kg fish grown.
- Johan Theron (UL) asked what impact it will have on the species whether a particular species is either included or excluded from the SEA process.
 - Paul Lochner (CSIR) responded stating that if a species does not form part of the SEA process now, it is business as usual and the existing legal processes will have to be followed. Additional species could be assessed and added later, following completion of the SEA.
- Johan Kooij (Catfish Supreme) asked that if a specific species is not included in the scope of this SEA, how that species will be affected if it is produced on large scale.
 - Asanda Njobeni (DAFF) responded stating that government is not in competition with industry, but the two are in collaboration; government is providing for both in all sectors. Development must be regulated and government is supporting industry. Operation Phakisa is also now assisting industry. DAFF has a MoU with universities on aquaculture development, hence DAFF's support to enrich the SEA project.
- Rogan Field (AASA) commented stating that in SA context aquaculture is seen as a vehicle for social development. Catfish is a hardy species which is an important characteristic when you look at unskilled labour and skills development. Catfish can also withstand mechanical failures, such as a pump breaking, for much longer periods than species like trout that are

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very sensitive to water temperature.

2. *Legislative context for the Aquaculture SEA*

- Presentation by Lizande Kellerman (CSIR)
- Comments received from attending DWS officials include:
 - Based on DWS Resource Management Plans for SA dams, an applicant is required to apply for a permit before utilising a dam for aquaculture activities;
 - DWS believes that through this stakeholder engagement process the SEA will assist with job creation for rural farmers in the aquaculture industry.
 - Lizande Kellerman (CSIR) responded that the aim of this SEA is to develop a pre-assessment tool that will enable competent authorities to screen the environment for ecological sensitivity and suitability for aquaculture prior to development.
- Johan Theron (UL) commented that the WRC is tasked with researching water usage for agriculture, aquaculture and industry in general. Rhodes University is doing a big project on SA dams and how these can be used for commercial aquaculture purposes since all state-owned dams are currently off limits for commercial purposes. Contact person is Gerhard Backeberg (WRC/RU).
- Etienne Hinrichsen (Aqua Eco) commented on a possible situation of programme paralysis i.e. a great initiative gets launched and authorities say “wait until the SEA is done”; however, during this SEA process industry should clearly understand it is business as usual. He added that SPLUMA is important to get access to resources when considering permitting requirements e.g. alien invasive species, protected areas, etc.
- John Dini (SANBI) asked how the new Aquaculture Bill will influence on the industry.
 - Asanda Njobeni (DAFF) responded that harmonisation and cooperation between sister departments e.g. DEA, DAFF and DWS must occur with regards to the Aquaculture Bill.
- David Fincham (BRT) commented that currently certain aquaculture permits have a short validity period; at the time of applying for the next permit, the existing one has already expired.
 - Paul Lochner (CSIR) responded confirming that the SEA will aim to streamline and align existing legislation, in particular current permitting requirements in order to reduce compliance complexities and avoid cascading effect in permitting applications.
 - DAFF has commissioned the Lean Institute Africa to conduct a desktop study re-engineering the current aquaculture business processes to provide a better understanding of the current legal and economic environment in which aquaculture activities are governed.
- Johan Theron (UL) commented that costs associated with certain aquaculture permits are very high and with short validity periods it is costing farmers a lot of unnecessary money.
- Wietsche Roets (DWS) spoke about the National Water Act that is based on maintaining resource water quality. DWS is developing new General Authorisation (GA) regulations that could be applied, instead of requiring WULAs, in order to facilitate aquaculture development in areas that have been pre-assessed. He also confirmed that water is a scarce resource and it must be protected and regulated properly.

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- Andre Hoffman: (MTPA) confirmed the existence and application of the Mpumalanga Nature Conservation Act 10 of 1998.

3. *Data capture and mapping exercise for aquaculture facilities*

- Presentation by Luanita Snyman-van der Walt (CSIR)
- Based on discussions about the SEA mapping exercise, the following questions/comments were received from participating attendees:
 - What is defined as “commercial scale” aquaculture?
 - How to map subsistence vs “artisanal” vs commercial scale aquaculture;
 - The majority of SA farmers would fall within the “artisanal” scale;
 - Include volumes of fish production (e.g. numbers of fish per month or per year);
 - Look at other international countries for regulations on volumes per time (e.g. monthly) such as Egypt, France, Turkey, Norway, etc.;
 - Obtain all Operation Phakisa project locations from DAFF;
 - Are we looking for criteria to rate the sensitivity of the receiving environment to aquaculture development, or identifying the environmental requirements for aquaculture development;
 - Compliance mapping – where would it be easier to comply when farming certain species;
 - Identify compatible land uses to accommodate aquaculture;
 - Suitability of areas may be more of an issue in the marine environment;
 - Group types of production systems (e.g. cages, ponds, recirculation aquaculture systems, flow-through systems, ranching etc.) and facilities into impacts, rather than looking at specific species.
- Mary Jane Thaela-Chimuka (ARC) commented that Provinces are trying to compile lists of aquaculture facilities and there are many people operating informally. She enquired about what would constitute a typical aquaculture facility.
- Andre Hoffman (MTPA) asked that all failed or decommissioned aquaculture projects be mapped and the reasons for failure be investigated.
 - Johan Theron (UL) responded stating that Rohani & Brits (Rhodes University) have published a document on the failure of aquaculture projects that could be considered in the SEA process.
- Rogan Field (AASA) commented that there is a general misconception that aquaculture is water intensive, but in reality it is much less water intensive than other agricultural practices. One idea is to first use water for aquaculture and then uses the outflow water from the aquaculture facility for crop irrigation. Therefore existing agriculture (with irrigation water available) is a good attribute for siting aquaculture facilities. He further mentioned that wastewater resulting from fish farms is nitrogen-rich and useful in big irrigation schemes. It is therefore beneficial to integrate aquaculture activities with

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agriculture (conventional farming practices) e.g. Thailand and Israel.

- Mary Jane Thaela-Chimuka (ARC) commented that Limpopo has started integrating agriculture with aquaculture, commonly known as 'aquaponics'.
- Etienne Hinrichsen (Aqua Eco) confirmed that there is sufficient amount of literature available on the topic of aquaponics. However, a successful aquaculture operation is usually a farmer with access to a niche habitat. He emphasized the importance of getting the scaling right using technology that can enable any aquaculture activity anywhere in any suitable environment. He further commented on the NRC being very particular on processing of fish.
- Neville Boardman (Biocentric) commented that the aquaculture industry is looking for a guideline to understand what is required of them in terms of a regulatory framework. Problems exist with identifying opportunities and creating regulations around where opportunities are thought to be located based on a mapping exercise at a macro perspective, and then exclude permitting of certain species in other areas. For example, Tilapia may not be suitable for the Highveld in natural production systems, but it can be out engineered and environmental management plans needed to manage and monitor operations.
 - Michelle Pretorius (DAFF) responded stating that the aim is not to incentivise aquaculture in certain areas and stop it elsewhere, but rather to promote and fast-track development in identified areas.
 - Paul Lochner (CSIR) summarized the discussion stating that if only natural conditions are considered, opportunities that can be created through technology could be missed. It is important to assess the risks associated with development; whether it is an environmental risk or a socio-economic risk. However, the SEA process involves an environmental assessment, hence the focus on the environmental perspective.
 - Most important attributes/aspects to consider during the SEA include land zoning, development footprint, water quality and quantity, and whether water resulting from aquaculture activities is being introduced back into natural systems.
 - Other countries do not have specific zoning for aquaculture development, thus the SEA should focus on what is hampering the industry development and limiting job creation.
- Etienne Hinrichsen (Aqua Eco) commented that state-owned dams could show potential for aquaculture development, but dams have target quality thresholds which requires an aquaculture facility to adhere to these thresholds.
- Rogan Field (AASA) commented stating that farming a species outside of its natural distribution range mitigates the risk of escapees becoming invasive. They would not be able to survive outside the technologically controlled systems e.g. technology of trout systems. In conclusion, there are not many naturally occurring habitats suitable for farming

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freshwater fish. He further commented that fish processing needs to meet general abattoir standards.

- Johan Theron (UL) commented that Prof Olaf Weyl at RU has mapped the suitability of SA natural water systems for aquaculture potential. The most important aspects relate to water quality when entering an aquaculture facility and when exiting the system through potential discharge back into a natural system. He further stated that ADZs may curb funding possibilities i.e. funding could be provided inside of an ADZ, but not when located outside the ADZ.
- Wietsche Roets (DWS) gave a presentation on the NWA and explained that DWS has a new approach to issuing a General Authorisation (GA) based on a Risk Assessment that has to be done by a SACNASP accredited scientist. If the risk is low, then the GA is adequate. If the risk is medium/high, then a WULA is required. It is likely that the low sensitivity areas from the SEA could correspond with the low risk areas.
- Wietsche Roets (DWS) stated that the SEA should consider impacts to water flow, quality, geomorphology, habitat and biota as interconnected aspects of aquatic systems.
- Neville Boardman (Biocentric) stated that the SEA should include a guideline outlining the permitting requirements e.g. GA/WULA pertaining to aquaculture activities.
- Etienne Hinrichsen (Aqua Eco) alerted the SEA team to the existence of a document, published in 2006 comparing different aquaculture types with different water uses.
- In response to a question whether the SEA will influence the WULA process and DWS is planning on doing to streamline the permitting requirements, Wietsche Roets (DWS) responded stating that it will not directly influence the process, but it will enable the identification of sensitive areas where GA may be easier to apply for.
 - Paul Lochner (CSIR) responded that in low risk areas from a water quality point of view, the SEA will seek to incorporate norms and standards which must be adhered to.
 - Asanda Njobeni (DAFF) further responded confirming that the Aquaculture Bill will seek to streamline and integrate the decision making framework.
- Paul Lochner (CSIR) summarized the discussion in the following key questions:
 - What is the sensitivity of the receiving environment to aquaculture development? If it is very high sensitivity, this could be “no go”. If it is low sensitivity, this could be suitable for aquaculture.
 - For different species, what are the different aquaculture production systems that can be used? (i.e. focus on the different production systems, rather than individual species). And what is the predicted impact of those systems on the environment?
 - What are the minimum regulatory requirements to be applied based on the sensitivity of the environment and the type of production system?
 - Based on an opportunities and constraints analysis, what areas are most suitable for aquaculture development? The point was made that most areas on South Africa

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are suitable for freshwater aquaculture provided there is water available and the right technology is applied (e.g. heating/cooling of water, recycling of water).

End of Meeting