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SOUTH AFRICAN POLICY DEVELOPMENTS WITH REGARDS TO AQUACULTURE.

1. INTRODUCTION

In terms of worldwide trends in a shift from capture fisheries to cultured alternatives, South Africa is lagging behind industry leaders. It is generally considered¹ that in most Nations that have a heavy dependence on fisheries as a source of protein, cultured fisheries are close to, or have exceeded the annual contribution towards fish protein consumed. Internationally, the total volume of captured fish resources sold in 2012 was 80 million tonnes, while the culture industries provided 90 million tonnes of fish, algae and invertebrate products.² In South Africa, the picture is different. In 2010, the total hake catch alone was estimated to be around 111 000 tonnes,³ while total marine and fresh water aquaculture output for 2010 was under 7000 tonnes (2015 tonnes of algae and sea weed, 1992 tonnes for marine animal species, which is dominated by invertebrate species, and 2621 tonnes for fresh water species, including non-food species such as ornamental fish).⁴ In 2010, there was no commercial fin fish aquaculture output. According to the (FAO), South Africa has 128 fresh water aquaculture farms and 33 marine farms at present.⁵ The slow uptake with regards to aquaculture is not directly linked to the state of the capture fisheries, as crucial capture fishery stocks have been in decline for a number of years.⁶ Reasons for the slow development of commercial aquaculture are numerous and varied, but for the purposes of this brief, it is worth briefly mentioning the environmental challenges that South Africa's coastline poses to marine aquaculture, and then focus on South African aquaculture and environmental management policy development in order to assess the presence or absence of industry support.

In its Policy for The Development of Sustainable Inland Aquaculture Sector in South Africa⁷, The Department of Agriculture, Forestry and Fisheries lists the following constraints to aquaculture development and expansion in the country:

1. Lack of technical support for farmers beyond the implementation phase of projects.
2. **Access to water rights.**
3. **Complex, inappropriate, unintegrated, unrelated statutory frameworks and procedures have resulted in failure to encourage the development of aquaculture and entrepreneurship.**
4. Difficulty for farmers to access relevant and appropriate technology.
5. Difficulty for farmers to access financial support from lending institutions.
6. Poor understanding of market needs.
7. **Lack of an aquaculture centre to coordinate activity and to collect industry statistics.**
8. Limited human resource capacity.

¹ For instance FAO (2014).

² Capture fisheries data does not always reflect total informal catches. Source cited: FAO (2014).

³ StatsSA (2013).

⁴ StatsSA (2013) and DAFF (2011).

⁵ http://www.fao.org/fishery/countrysector/naso_southafrica/en.

⁶ See Jooste (2013 / 2014).

⁷ DAFF (Undated).



9. Lack of established infrastructure for freshwater fisheries for food security.

The four constraints highlighted in bold face can be considered as constraints that can best be addressed through policy interventions. In a follow-up policy document, the National Aquaculture Policy Framework (2013)⁸, DAFF further highlights the following policy constraints that are in play within the South African aquaculture sector at present:

- A lack of an enabling regulatory climate;
- Over-regulation in the industry compared to other food-producing sectors; and
- An un-coordinated institutional environment characterised by fragmented policies and strategies from various tiers of government.

2. POLICY ENVIRONMENT

The “user friendly” version of the Department of Agriculture, Forestry and Fisheries’ legal guide for the aquaculture industry⁹ is a 100 page document listing 33 pieces of provincial legislation, and a permissions checklist containing 14 national and 32 provincial (not all applicable in each province) permits, authorisations and consents potentially required for the **developmental phase** of an aquaculture project. During the **production phase**, 11 national and 38 provincial requirements for permits, authorisations and consents apply (again, not all applicable to each project).

In terms of government authorities that play a role in the agriculture industry, the list is just as exhaustive.

Seven concurrent competencies exist:

- Agriculture
- Animal Control and Diseases
- Environment
- Health Services
- Pollution Control
- Planning and Development
- Water and Sanitation Services

Exclusive provincial competencies exist for:

- Veterinary Services
- Refuse removal

⁸ DAFF (2013b).

⁹ DAFF (2013).



Aquaculture development and practice encompasses a wide range of activities requiring support from a range of national and provincial departments. The legal guide¹⁰ lists 11 National and 2 to 3 provincial departments (departments responsible for Environmental Management and Nature Conservation, Agriculture, Land Reform and Rural Development and Economic Affairs) that have competencies in relation to aquaculture activity.

Depending on the nature of aquaculture environments, species selection and import/export activity, the following pieces of legislation may apply:¹¹

- Restrictions on the culture of specific marine species: Marine Living Resources Act 18 of 1998 (MLRA).
- Restrictions on the culture of specific fresh water species (provincial legislation): Cape Nature and Environmental Conservation Ordinance, 14 of 1974; Transvaal Nature Conservation Ordinance, 12 of 1983.
- Restrictions on importing species: Animal Diseases Act 35 of 1984; Marine Living Resources Act 18 of 1998; Abalone Regulations in terms of the National Regulator for Compulsory Specifications Act 5 of 2008 (NRCSA); Animal Health Act 7 of 2002.
- Restrictions on the movement of species across provincial borders (note that these pieces of legislation pre-dates 1994 and therefore still refer back to previous provincial boundaries): Cape Nature and Environmental Conservation Ordinance, 14 of 1974; The Transvaal Nature Conservation Ordinance, 12 of 1983; The Ciskei Nature Conservation Act 10 of 1987; The KwaZulu-Natal Nature Conservation Ordinance 15 of 1974; The Orange Free State Nature Conservation Ordinance, 8 of 1969.
- Restrictions related to Biodiversity impacts: The Genetically Modified Organisms Act, 15 of 1997 (GMOA); The National Environmental Management: Biodiversity Act, 10 of 2004 (NEMBA); TOPS (threatened or Protected Species, including the habitats on which these species depend) Permits; Alien and Invasive Species (AIS) Permits; AIS Risk Assessment (To be performed by and funded by the applicant).
- Restrictions on Broodstock: Marine Living Resources Act 18 of 1998 (MLRA)
- Site-related Impact Assessments: National Environmental Management Act (NEMA) and the EIA Regulations; Marine Living Resources Act 18 of 1998 (MLRA) and Regulations; National Environmental Management: Biodiversity Act, 10 of 2004 (NEMBA); National Heritage Resources Act, 25 of 1999 (NHRA).
- Other Site Related Permissions: Marine Living Resources Act 18 of 1998 (MLRA) and Regulations.
- National Environmental Management: Protected Areas Act, 2003 (NEMPAA); National Environmental Management: Integrated Coastal Management Act, 24 of 2008 (NEM:ICMA).
- Access to Land and Sea Space: A coastal lease for sea space can only be granted by the relevant provincial conservation authority (by delegation of the Premier) or parliament depending on the circumstances. To lease coastal land the above position also applies except

¹⁰ DAFF (2013).

¹¹ Ibid.



that the National Ports Authority controls leases within ports. Two leases may therefore be required (Sea Shore Act (SSA) and National Ports Authority Act (NPAA)); National Environmental Management: Integrated Coastal Management Act, 24 of 2008 (NEM:ICMA); Sea Shore Act 21 of 1935 (SSA) and Regulations; National Ports Act 12 of 2005 (NPAA); Marine Living Resources Act 18 of 1998 (MLRA) and Regulations, GNR.1111 of 2 September 1998.

- Agricultural Leases: Subdivision of Agricultural Land Act 70 of 1970 (SALA).
- Sub-division of Agricultural land: Subdivision of Agricultural Land Act 70 of 1970 (SALA).
- Zoning: Municipal Zoning Schemes.

Once an individual has made up his or her mind that they want to establish an aquaculture business, the process of performing an EIA and applying for permits to conduct an aquaculture activity is also not straight forward. In a recent review of the aquaculture policy environment, it was established that aquaculture development and practice contain 13 different listed activities listed in the aquaculture-specific EIA process.¹² A dedicated EIA process document has been produced for the aquaculture industry,¹³ within which the following is highlighted:

- A marine aquaculture right is allocated for a period of 15 years (which is still a relatively short period of time considering the capital investment required), but permits authorising aquaculture activity is reviewed annually.
- It is up to the applicant to determine exactly which permits are needed for an operation. For the marine environment alone, the EIA guide highlights 11 different permits.
- Ensuring proper authorisation for all facets of the activity during the EIA process is also complicated. The checklist provided lists 9 categories of authorisation required. Each categories are governed by different competent authorities and pieces of legislation.

From this short summary, it becomes clear that the practice of commercial aquaculture in South Africa is a highly technical activity, requiring an ability to navigate a multitude of policies administered by almost as many national and provincial authorities. Also concerning is that the EIA guidelines were drawn up by consultants, not the Department, raising questions regarding the level of competency within the Department to assist in EIA and permit applications for previously disadvantaged individuals unable to afford consultants to drive their applications. Thus, even before aspects of economy, marketing or development costs come into play, it can be concluded that there are significant barriers to entry in the aquaculture industry with regards to current legislation and permitting/legal requirements. One potential way in which government can assist in simplifying the process of commercial aquaculture establishment is through the provision of areas of the country specifically designated for aquaculture development, or within which a number of industrial developments, including aquaculture, can be supported. These possibilities will be highlighted further on in the brief.

¹² Katerere (2013).

¹³ DEA (2012).



2.1 Culture species and the influence of current legislation

One of the main challenges faced by aquaculture industries in South Africa is the nature of culture species. South African legislation strongly controls against alien species introduction, hybrid species, genetically modified species as well as the culture of species outside of its geographic range. This poses a significant challenge to the South African aquaculture industry for a number of reasons:

- There are no fast-growing indigenous fresh water species with wide ranging market appeal in South Africa that can be cultured in all provinces. The sharp tooth catfish is one possibility, but only for parts of the country where it naturally occurs.
- The international species preferences (should South African producers wish to export) of the global market demands the use of species familiar to those markets.¹⁴
- Fast-growing fish strains (genetically modified as well as hybrid) have been developed for the international aquaculture industry, but will be heavily regulated in South Africa. The local industry will not be able to out-compete international producers using these stock on a large scale. It is therefore likely that a continued regulatory exclusion of these species/stock will result in importation of cheaper, internationally-produced products.
- At present; around 61 percent of all species cultured in South Africa are exotic¹⁵, highlighting the complexities of demand, profitability and market access.

South Africa has strict environmental legislation governing the introduction and farming of non-native species, to the point that regulations designate the natural distribution boundaries of indigenous species within parts of the country. In the recent past, legislative amendments also threatened the status of commercially valuable species such as trout, which has been farmed in the country for over a century. The trout industry is a multi-billion Rand food and lifestyle-based sector, which described the initial listing of farmed trout species as alien invasive by the DEA as the management of biodiversity for diversity's sake only, ignoring the economic role that the species in question¹⁶ have played for generations. Even though the agreement was reached that trout will be allowed as part of the aquaculture industry in areas where they already exist, the industry remains concerned that factions within the DEA still want the species treated solely as an alien invasive.¹⁷ Imagine the same stance being taken against Angora goats, Merino sheep or the multitude of imported beef cattle breeds, all exotic species, which form the backbone of South Africa's red meat industry.

The National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004) was recently updated with regards to its Alien and Invasive Species Regulations (2014).¹⁸ These regulations strictly govern all actions regarding the introduction of alien species, and with regards to aquaculture, the regulations also have an influence on activities such as facility design, impact and risk assessments that has to be performed, water discharge, species treatment and transport, species cultured and site selection. NEMBA regulations protect the environments in which aquaculture is most likely to be located due to its need for suitable water. Discrete catchment systems,

¹⁴ See FAO (2012) for details.

¹⁵ DAFF (2014).

¹⁶ Lax *et al.* (2014).

¹⁷ *Ibid.*

¹⁸ See Government Gazette number 37885, August 2014 for details about the amendments.



watercourses and catchments are all rigorously protected, with NEMBA regulations requiring detailed Risk- and Impact Assessments to accompany any aquaculture development proposal.¹⁹ Chapter 4 of NEMBA specifically deal with Threatened or Protected Ecosystems and Species (TOPS), and set stringent control for any activity that could impact on these.

2.2 Aquaculture Development Zones (ADZ) and Industrial Development Zones (IDZ) as Aquaculture Hubs

In its 2011 Annual Report for the aquaculture industry²⁰, the department highlights the need for the development of ADZs as a priority activity in order to fast-track aquaculture expansion in the country. In a nutshell, An ADZ is a designated aquaculture development zone within which a number of land-based (can be fresh water or marine) aquaculture establishments can be assisted to develop through the provision of simpler permitting and licensing procedures and infrastructure support. According to the Department, ADZs are designed to promote an environment whereby multiple users or farmers can accommodate or utilise the same area. The operation of ADZs will, therefore, alleviate poverty through job creation and income generation as well as address the issue of food security.²¹

3. RECENT POLICY DEVELOPMENTS

The identification of these and other non-policy challenges in the industry led to the release of the National Aquaculture Strategic Framework in 2012²² and the National Aquaculture Policy Framework in 2013.²³ The Strategic Framework acknowledges that aquaculture development in South Africa is in its infancy, requiring special and appropriate attention and a harmonised national policy leading to a co-ordinated approach to aquaculture development between the various national and provincial government sectors. Two years have followed since the release of this strategic framework, and it is hoped that the briefing session called for by the Committee will highlight progress made with regards to creating a more enabling environment for aquaculture development in the country. The following critical success factors were proposed in this document. The framework needed to:²⁴

- Be instrumental in developing a pragmatic regulatory framework within a supportive operational environment that is appropriate and harmonized between the state, provinces and municipalities.
- Ensure effective coordination among government departments and its agencies to maximize efficiency of development programmes and delivery.
- Identify and invest in and drive priority aquaculture research, development and technology transfer programmes that can deliver in the short (2-3 years) to medium term (5 years) and consider longer term initiatives on merits and achievements to date.
- Expand access to investment and operating capital as well as key inputs such as fingerlings, feeds and equipment

¹⁹ See Act No. 10 of 2004: National Environmental Management: Biodiversity Act, Chapters 4, 5 and 7.

²⁰ DAFF (2012).

²¹ DAFF (2012).

²² DAFF (Undated).

²³ DAFF (2013).

²⁴ Ibid.



- Develop and coordinate implementation of human capacity building including extension, education, training and public awareness programmes.
- Coordinate development of effective stakeholder partnerships such as community-government, industry-government, industry-institute, and government-institute.
- Coordinate development of effective government promotional, marketing, and trade efforts.
- Develop effective institute-industry and institute-stakeholder partnerships.
- Develop timely and effective bio-security programmes and guidelines.

The Aquaculture Policy Framework identifies a number of key needs for the development of an aquaculture industry in South Africa. These include:²⁵

- The Development of an enabling regulatory environment;
- The development of an Aquaculture Act and a need to align this Act to other existing pieces of legislation;
- Other pieces of legislation such as the Animal Diseases Act have to be amended to cover gaps pertaining specifically to the aquaculture industry.

The Policy focus Areas Identified in the Document includes:

- Legal and Regulatory Frameworks;
- Environmental Integrity;
- Aquaculture research, technology development and transfer;
- Aquaculture authorisations;
- Aquaculture Development Support;
- Transformation and Broadening Participation; and
- Monitoring and enforcement of authorisation conditions.

DAFF, in these Gazetted policy frameworks, acknowledge that it will take some time to develop the Aquaculture Act, and as such the fragmented policy landscape will still persist for some time. Industry, also, perceives the policy document as supportive, but with a long-term focus, and does not expect a rapid transition towards policy consolidation or infrastructure support.²⁶ The Department requests that all department and agencies involved institute the current legislation in a manner that allows for:²⁷

- Equal access for all sectors of South African Society to aquaculture development opportunities;
- The safe and sustainable use of natural resources by the aquaculture industry;
- The continued conservation of aquatic ecosystems and unique habitats; and
- The reduction and ultimate elimination of environmental impact from aquaculture industries on the environment.

²⁵ DAFF (2013).

²⁶ Dawson, Edwards and Associates (2014).

²⁷ DAFF (2013).



4. CONCLUDING REMARKS

It is encouraging to observe the current developments with regards to aquaculture development in the country, although industry notes that the policy objectives are not likely to make great inroads immediately. Recent reports indicate that producers are successfully applying for provisional permits to farm Nile tilapia, a highly regulated alien invasive species that forms the backbone of the international tilapia farming industry.²⁸ Although the industry is not up to speed with several key sectors such as marketing, commercialisation of South African species and the supply of suitable brood stock, the industry view appears to be positive.²⁹

The policy framework within which aquaculture has to develop seem to be geared towards environmental management rather than aquaculture development, even though it is acknowledged that a pro-aquaculture stance earlier on in the development of the industry did not necessarily had to have been at the expense of the environment. A case in point is the timing of policy document releases by DAFF. Prior to the release of the National Aquaculture Policy Framework (2013), the Department released its Environmental Integrity Framework for Marine Aquaculture (2012).³⁰ The EIF's primary objective is contributing towards sustainable development of the marine aquaculture sector, and deals with Environmental Management Procedures such as EIAs and norms and standards and describes the setting of monitoring objectives, how indicators are determined, quality standards and the approach to monitoring; both at sector and project level.³¹ Of the four aspects of aquaculture development that the Department highlighted in its Policy Framework as important matters that has to be addressed while the longer term development of the Aquaculture act is underway, 75 percent deal with environmental management and only one with equal access to aquaculture development opportunities. This creates the impression that environmental management is seen as more important that developing an enabling environment for aquaculture development. Environmental sustainability is vital, but this can be a pre-condition to even aggressive aquaculture development promotion. Surely a policy approach such as the one adopted in the Policy for the development of a sustainable inland aquaculture sector in South Africa³² places sufficient emphasis on sustainable development without appearing to elevate that concept above the need for aquaculture development in South Africa. Aquaculture, after all, is required to remedy unsustainable capture fisheries practice already responsible for major levels of environmental pressure.

5. REFERENCES

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²⁸ James (2014).

²⁹ Ibid.

³⁰ DAFF (2012b).

³¹ Katerere (2013).

³² DAFF (Undated).



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