POLICY FOR THE DEVELOPMENT OF SUSTAINABLE INLAND AQUACULTURE SECTOR IN SOUTH AFRICA

Directorate: Animal Production
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# LIST OF ACRONYMS

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<th>Acronym</th>
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<tr>
<td>AASA</td>
<td>Aquaculture Association of Southern Africa</td>
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<td>ADZ</td>
<td>Aquaculture Development Zone</td>
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<td>AGIS</td>
<td>Agricultural Geo-referenced Information System</td>
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<td>ASWG</td>
<td>Aquaculture Sector Working Group</td>
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<tr>
<td>DEAT</td>
<td>Department of Environmental Affairs and Tourism</td>
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<td>DLA</td>
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<td>DoA</td>
<td>Department of Agriculture</td>
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<td>DoH</td>
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<td>dti</td>
<td>Department of Trade and Industry</td>
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<td>DWAF</td>
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<td>Framework for Aquaculture Research Management</td>
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<td>Genetically Modified Organisms</td>
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<td>HR</td>
<td>Human resources</td>
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<td>IFPRI</td>
<td>International Food Policy Research Institute</td>
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<td>MCM</td>
<td>Marine and Coastal Management</td>
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<td>NAWG</td>
<td>Northern Aquaculture Working Group</td>
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<td>NEMA</td>
<td>National Environmental Management Act</td>
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<td>NEPAD</td>
<td>New Partners for Africa's Development</td>
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<td>PDA</td>
<td>Provincial Department of Agriculture</td>
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<td>PPP</td>
<td>Public Private Partnerships</td>
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<td>R&amp;D</td>
<td>Research and development</td>
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<td>SADC</td>
<td>Southern African Development Community</td>
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<td>SAWG</td>
<td>Southern Aquaculture Working Group</td>
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<td>SETA</td>
<td>Sector Education and Training Authority</td>
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<td>WRC</td>
<td>Water Research Commission</td>
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DEFINITION(S)

Inland aquaculture refers to the farming of aquatic animals and plants under controlled or selected aquatic environments (fresh, sea or brackish waters) for any commercial, small-scale, recreational, or other public purpose.
1. INTRODUCTION

Aquaculture is globally the fastest growing agricultural sector. The increase in demand for fish is juxtaposed against the stagnant, if not declining fisheries production worldwide, stimulating the rapid growth of this new sector. In fact, in a recent study conducted by the WorldFish Centre and International Food Policy Research Institute (IFPRI) it was estimated that if Africa is to maintain its current fish consumption, it would need to grow its fish production by over 260% over the next 16 years.

It is therefore clear that the future of Africa's fish production will largely have to be met by the expansion of aquaculture. However, as this industry is relatively young, particularly in Africa where few indigenous species have been domesticated for production, improving existing aquaculture methods and determining new opportunities through research and development is critical.

The importance that South Africa has placed on aquaculture to meet the demand for fish and to promote economic development is resonated by the New Partners for Africa Development (NEPAD) Fishery and Aquaculture Action Plan, which was endorsed by African leaders at the NEPAD Fish for All Summit in Abuja, Nigeria in August 2005. The Action Plan called for greater emphasis for member countries to place on aquaculture and to also encourage greater cooperation between member countries. It is only through this that African aquaculture can become competitive at the global level.

The South African Government is committed to working in partnership with the aquaculture industry to achieve the maximum sustainable growth to meet the significant investment and employment opportunities to rural economic expectations. At the same time, the South and Southern African freshwater aquaculture industry is stimulated/enhanced by the available resources, market factors, agricultural infrastructure, small technology, international partnerships and collaborations as well as socio-economic factors. The development of the sector is dependent on the availability and successful integration of natural, human and economic resources.

Although limited, constraints in terms of natural resources include the seasonal variation in climate, particularly in the southern and high-lying regions. Human resources are largely underdeveloped. This will have to be addressed in order to ensure sustainable and equitable development. While low-cost, unskilled labour may provide opportunities in certain labour-intensive sectors, expertise on managerial level is limited - particularly with regard to large-scale intensive farming systems. Improved skills and competence to manage fish resources in an environmentally sustainable manner will also be critical. Economic resources provide an opportunity in terms of available infrastructure, though access to capital and markets is difficult.
2. SITUATION ANALYSIS

There are a number of reasons for the limited growth of the aquaculture industry in South Africa. These include:

i) Lack of technical support for farmers beyond the implementation phase of projects.
ii) Access to water rights.
iii) Complex, inappropriate, unintegrated, unrelated statutory frameworks and procedures have resulted in failure to encourage the development of aquaculture and entrepreneurship.
iv) Difficulty for farmers to access relevant and appropriate technology.
v) Difficulty for farmers to access financial support from lending institutions.
v) Poor understanding of market needs.
vii) Lack of an aquaculture centre to coordinate activity and to collect industry statistics.
viii) Limited human resource capacity.
ix) Lack of established infrastructure for freshwater fisheries for food security.

3. OBJECTIVES

To facilitate the development of a united and prosperous freshwater aquaculture sector (a policy with the capacity to unify and simplify aquaculture legislation, regulation and to facilitate the sustainable and equitable use of aquatic resources) – taking the following into consideration:

i) Integrated norms and standards for sustainable freshwater aquaculture
ii) Accurate statistics
iii) Freshwater aquaculture for food security and poverty alleviation
iv) The development of freshwater aquaculture capacity in the smallholder/emergent producer/rural sector
v) Infrastructure to support a sustainable freshwater aquaculture sector
vi) Appropriate and accessible advisory and support services
vii) Intellectual property rights
viii) Intergovernmental cooperation
ix) International obligations
x) Promoting the commercial sector
xi) Promoting PPP ventures

4. SCOPE OF THE POLICY

The scope of this policy can be defined in terms of (i) its geographical area of application, (ii) the sectors for which it is intended, (iii) the identification of its users, (iv) its application in guiding the quality of products, addressing food security issues, the promotion of exports and export products, the promotion and
regulation of foreign investment and its role in achieving compliance with national and international regulations treaties, protocols and policies.

This policy is intended for use in all facets of the on-land aquaculture sector, from small-scale emerging farmers to commercial ventures. It is also intended for use by all parties involved and participating in aquaculture in South Africa. Participants include producers, suppliers, processors, marketers, consultants, tertiary and educatory bodies, environmental custodians, consumers, the general public and all regulatory and government departments.

The policy will also facilitate the entry of small-scale emerging farmers to the commercial sector. The inclusion of small-scale emerging farmers in aquaculture will have the direct impact on food production and economic development in rural areas. Furthermore, the promotion of the commercial sector by way of PPP will also have a direct positive impact for the small-scale farmers, especially with regard to technical support and marketing.

Indirectly, the policy will provide guidance on the quality and promotion of freshwater aquaculture products to export markets, the promotion and regulation of foreign investment in South African freshwater aquaculture and its role in achieving compliance with international treaties, protocols and policies to which South Africa is a signatory on behalf of the entire aquaculture industry.

5. BASIC PRINCIPLES

The principles are based on the guidelines in the Protocol on Fisheries (2001) issued by the Southern African Development Community (SADC). This protocol was endorsed by the State Presidents of 13 SADC countries. As such, South Africa’s aquaculture sector must integrate the following principles, namely to:

i) Facilitate and support the optimal economic contribution of aquaculture to the country;

ii) Promote on-site research, demonstrations and practitioner-to-practitioner agricultural advice to increase economic and social benefits from freshwater aquaculture;

iii) Promote private sector participation;

iv) Undertake research and technological development related to aquaculture production;

v) Monitor and regulate the introduction of exotic species or biologically transformed (e.g. genetically modified) species to aquatic ecosystems;

vi) Establish norms and standards (including regulations) and guidelines for environmental impact assessments;

vii) Monitor diseases and control the spread of diseases relevant to aquatic species (feral and cultured);
Promote sustainable aquaculture development from a social, economic and environmental perspective:

Promote the commercial sector and the entrance of small-scale emerging farmers.

6. KEY DELIVERABLES

6.1 Aquaculture database

As accurate and easily available statistics form a key component of effective strategic planning and management, a National Aquaculture Database will be developed and maintained. The Department of Agriculture (DoA) will publish the annual statistical review.

6.2 Aquaculture Development Zones (ADZs)

(i) Site selection and zoning

The lack of “ready-to-invest” sites zoned for aquaculture is seen as one of the most significant impediments to rapid growth and investment. In order to promote investment in aquaculture, Government will identify and establish these sites. It is envisaged that the ADZs will become the hub of commercial aquacultural activities. An emphasis in developing the ADZs will be the requirement that commercial ventures that enjoy government support will form meaningful partnerships with emerging small-scale farmers by way of PPPs.

(ii) Norms and standards

Norms and standards for sustainable freshwater aquaculture at different levels and for different production systems will be developed. These will include large to small–scale operations with guiding principles and in harmony with relevant legislation. Area–wide planning and zoning should also be taken into consideration. This is of critical importance as the provisions of the Biodiversity Act and the NEMA regulations will require impact studies and risk assessments. The sale of ‘farmed fish and fish products’ will also require permits. Clearly other government departments (e.g. DEAT, DWAF, Dept of Labour, etc.) must have a role in the regulation of aquaculture.

Compliance to all norms and standards and best management practices shall be achieved through cooperative governance and consultation with all interested and affected parties. In this regard, new entrants and established producers have to be aware of all new developments.
6.3 Environmental management

Environmental impact assessment (EIA)

Inappropriately sited and poorly planned aquaculture ventures have the potential to be environmentally degrading, leading to loss of biodiversity and impairment of ecosystem function. Aquaculture endeavors will have to comply with environmental regulations.

6.4 Promotion of small-scale emerging farmers

Programmes to involve small-scale farmers from areas with suitable water resources in sustainable forms of aquaculture shall be part of any implementation strategy. These programmes will include integrated systems, advisory and support services, starter packs and other means of support and would require inputs from all relevant stakeholders and role players.

6.5 Marketing

The Department of Agriculture will assist in the development of markets for aquaculture products and technology. In collaboration with the National Agriculture Marketing Council, studies will be undertaken to identify new markets for aquaculture products, both local and international. There is also a market for South African aquaculture technology in Africa. The Department of Agriculture will also assist in the marketing of technology in the continent collaborations with the Department of Science and Technology and the Department of Trade Industry. The exchange of technology within the continent is a NEPAD objective that would also strengthen the aquaculture industry in South Africa.

6.6 Government hatcheries/service centres

Existing government hatcheries are currently being revitalised. Their function of providing seed to emerging farmers will have to be expanded. It is envisaged that they will play a supporting role and will also be considered for use as service centres that provide training and extension on an ongoing basis.

6.7 Centres of excellence

Centres of excellence at tertiary level that support aquacultural research and appropriate technology will have to be supported. Specific areas include fish health, genetics and feed development. It is envisaged that these centres of excellence will also assist in not only supporting aquaculture in South Africa, but also internationally.
6.8 Interdepartmental cooperation

There is need for greater communication and cooperation between government departments that have jurisdiction over aquaculture. Presently, the Aquaculture Sector Working Group (ASWG), fulfils this role. The ASWG, a body made up of all stakeholders within the freshwater aquaculture sector, advises the DoA on issues relating to policy implementation. It will have two regional subgroups viz. Northern Aquaculture Working Group (NAWG) and the Southern Aquaculture Working Group (SAWG). The forum will also facilitate issues of research and technology development, knowledge sharing, promotion of activities within the industry and effective communication within the entire sector.

Furthermore, the ASWG will also coordinate the promotion of aquaculture activities, transfer of technology, capacity building and technical inputs to policy and legislation as well as development, management and implementation of the Framework for Aquaculture Research Management (FARM). Other functions could include coordination of ADZs, EIAs and development of guidelines for aquaculture.

6.9 Research and development

Research underpins the development and growth of aquaculture. Areas of research such as genetics, developing new species for culture, improving diets, and developing protocols for better fish health management are of vital importance for the competitiveness advantage of this sector.

The DoA has developed a Framework for Aquaculture Research Management (FARM), a document that outlines the research priorities. It is envisaged that this document will guide aquaculture Research and Development institutions.

Central to research development is the issue of safeguarding Intellectual Property and South Africa’s heritage in the genetics of its natural resources.

6.10 Human resource development

There is a need to increase the technical capacity in aquaculture at all levels. Small-scale farmers need access to trained aquaculture extension officers. At the province level, there is a need for qualified aquaculture managers to coordinate and promote the sector. Grants have to be made available to attract more black students to study aquaculture at universities.

Appropriate training manuals for small-scale farmers and the aquaculture extension officers will have to be developed. The course will have to conform to Sector Education and Training Authority (SETA) requirements.
6.11 Women and youth empowerment

The participation of women and youth in economic development is a national priority. Recognition of this priority will have to be taken in consideration when developing this sector.

7. REGULATORY IMPLICATIONS

To prevent the current regulatory fragmentation in dealing with aquaculture, all South African statutory bodies will apply the existing legislation, attached herein as Annexure A, in a manner that ensures that:

i) Freshwater aquaculture is made accessible to all sectors of the South African community.
ii) Natural resources (such as water and land) are responsibly allocated and used in freshwater aquaculture.
iii) Aquatic and greater ecosystems, including their biodiversity and unique habitats, are conserved.
iv) Environmental degradation through freshwater aquaculture is minimal or eliminated.
v) South Africa meets its international obligations for sustainable use of fish resources.

8. CONCLUDING REMARKS

This document has highlighted the need for an integrated multidisciplinary approach for the development of a sustainable aquaculture sector. This policy recognises the need to support commercial and small-scale emerging farmers. Furthermore, the DoA has identified the role that women can play in aquaculture to meet national goals with regard to food production, job creation and economic development.

Interdepartmental cooperation is central to the success of aquaculture. It is envisaged that an over-arching National Aquaculture Strategy will be developed to guide all stakeholders with regard to policy implementation.
ANNEXURE A

Current legislative environment

At present, the legislation controlling freshwater aquaculture is administered by three leading departments.

(i) DEAT administers Acts that deal with the sustainable use of natural resources:

- The National Environmental Management Act, 1998 (Act No.107 of 1998), and
- The Biodiversity Act, 2004 (Act No. 10 of 2004).

The legislation will affect any freshwater aquaculture development, as this will be subject to an environmental impact assessment and/or risk assessment. This can be expensive and could hamper smallholder/food security aquaculture ventures in particular.

(ii) DoA legislation deals with the sustainable use of agricultural resources:

- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983);

Zoosanitary and phytosanitary control:

- Animal Diseases Act, 1984 (Act No. 35 of 1984)

and the control over any genetic improvement and modifications to animal and plant resources used for food and agriculture:

- The Genetically Modified Organisms Act, 1997 (Act No.15 of 1997), (GMO Amendment Bill)

Any agricultural development involving freshwater aquaculture would be subject to this legislation as well as the DEAT legislation. In addition, any movement of aquatic animals would be subject to both DoA and DEAT legislation requiring more than one permit. This adds expense and can also be time consuming as there is no one-stop service at present.

(iii) DWAF in turn administers legislation that provides for the management of water resources:

Any freshwater aquaculture activity using water impoundments or resources would therefore be subject to this legislation as well. Other departments – DLA, dti and DoH also administer legislation that impacts directly or indirectly on Aquaculture.

The relevant Acts are not integrated and this has created a situation where no single department has either the mandate or the capacity to provide the one-stop service that the sector would need for sustainable development.

This situation (regulatory fragmentation) has highlighted critical shortfalls in the following service delivery areas:

(i) Management - the capacity (HR, skills, competence, technical expertise, etc.) to provide an effective user friendly service
(ii) Resources – the capacity (financial resources, R&D infrastructure, hatcheries, training, information networks, etc.) to support and maintain a viable aquaculture sector
(iii) Compliance – the capacity to facilitate and maintain (public awareness, monitoring and evaluation, inspection services, etc.) a climate of pro-active compliance.

With these factors in mind, it is clear that, if freshwater aquaculture is to develop as a sector with the capacity to provide food and to generate income to buy food, there will have to be a system of uniform legislation and regulation.