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**GENERAL NOTICE**

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**NOTICE 799 OF 2007**

**DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM**

**PUBLICATION OF DRAFT POLICY FOR THE DEVELOPMENT OF A SUSTAINABLE MARINE  
AQUACULTURE SECTOR IN SOUTH AFRICA**

I, Marthinus van Schalkwyk, the Minister of Environmental Affairs and Tourism, hereby publish for comment the draft policy for the development of a sustainable Marine Aquaculture Sector in South Africa set out hereunder.

Interested and affected parties may submit written comment to Marine Aquaculture Management at the Department of Environmental Affairs and Tourism: Branch Marine and Coastal Management ("the Department"), Private Bag X2, Roggebaai, 8012. Written comments may be posted by registered mail to above address; or faxed to (021) 402-3009; or emailed to [aqualculture@deat.gov.za](mailto:aqualculture@deat.gov.za) and marked for attention of Ms Betsie Taylor . All written comments must be received by the Department by no later than 16h00 on **TUESDAY 31 JULY 2007**. Comments received after this time may not be considered.

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**ACRONYMS USED IN THE TEXT**

BBBEE	Broad Based Black Economic Empowerment
DEAT	Department of Environmental Affairs and Tourism (the Department)
DLA	Department of Land Affairs
DoA	Department of Agriculture
DoH	Department of Health
DWAF	Department of Water Affairs and Forestry
DST	Department of Science and Technology
DTI	Department of Trade and Industry
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
MAAF	Marine Aquaculture Advisory Forum
MADP	Marine Aquaculture Development Plan
MAWG	Marine Aquaculture Working Group
NEMA	National Environmental Management Act 107 of 1998
NEMBA	National Environmental Management Biodiversity Act 10 of 2004
PPP	Public Private Partnership
SABS	South African Bureau of Standards
SETA	Sector Education Training Authority
SMMEs	Small, Medium and Micro Enterprises

**Definitions:**

Sea ranching:	Release of identifiable aquaculture products into the sea area where exclusive access is confined to a limited number of harvesters (Bannister, 1991).
Stock enhancement:	Release of stock for the public good without the intention of directly benefiting an exclusive user group (Bannister, 1991).

## 1. INTRODUCTION

The principal challenges that the South African government seeks to address are poverty and unemployment. The contribution of capture fisheries to food security and employment has been in decline since the 1950s, partly due to over-exploitation of resource. For example, the size of hake stocks is now ten percent (10%) less of what was caught 50 years ago. This trend has recently been exacerbated by shifts in the distribution of certain fish species, for example, thirty (30) years ago seventy percent (70%) of West Coast rock lobster was landed along the Northern Cape coast but today ninety percent (90%) of the fish are landed in the Cape Town vicinity. The decline in catches has resulted in the closure of a number of fish processing establishments, mainly along the West Coast, which has in turn led to job losses and economic hardship for people who historically found employment in the fishing industry. Marine aquaculture presents an opportunity to substantially increase the diversity of economic activity in these coastal areas. It also has the potential to create skills-based employment and income for coastal communities. Most leading fishing nations also have a thriving marine aquaculture industry.

This policy is aimed at promoting the development of an economically sustainable and globally competitive marine aquaculture industry in South Africa. At the same time it is imperative that the industry has minimum negative impact on the environment. The main purpose of the policy is to encourage acceleration of the development of the industry. A key principle is that the role of government is to facilitate and support this industry which will be driven by the private sector. The policy will be complemented by a Marine Aquaculture Development Plan (MADP), which will outline strategies for its practical implementation. Guidelines for the establishment and management of specific forms of marine aquaculture will also be developed. These will include new activities such as sea ranching, stock enhancement, the rearing of species for the aquarium-ornamental trade and sea-based cage farming. The MADP and the guidelines for aquaculture-related activities are operational documents that will be reviewed and updated on a regular basis.

For the purposes of this document, marine aquaculture (including sea ranching) is defined as:

***The farming of marine aquatic organisms including fish, molluscs, crustaceans and plants in controlled or selected marine aquatic environments, with some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators etc. Farming also implies individual or corporate ownership of the stock being cultivated. (Nash, 1995)***

Aquaculture (marine as well as fresh water) is one of the fastest growing food production systems in the world. Over the past 15 to 20 years it has developed into a global industry, with over 60 countries engaged in the production of more than 250 species of fish, shellfish, crustaceans and aquatic plants. World aquaculture production has grown at an average annual rate of 8.8 percent from 1950 to 2004. Despite this phenomenal global growth, Africa's contribution to the world's aquaculture production has remained disconcertingly low, accounting for less than 1% of global production, while South Africa in turn contributes only about 1% of Africa's production. The contribution of the marine aquaculture industry to the Gross Domestic Product (GDP) of South Africa is a modest 0.004%. It is believed that with government facilitation and support the contribution of marine aquaculture to the GDP could increase significantly in the long run.

There are number of reasons for South Africa's relatively poor performance in the sphere of marine aquaculture. These include:

- i. A high-energy coastline (rough seas with strong wave and current action) with a limited number of naturally protected sites, which makes farming at sea difficult hence the majority of aquaculture operations are based on land;
- ii. A coastal strip that is relatively pristine, highly sought after such that marine aquaculture competes with other activities such as tourism, recreation, real estate etc;
- iii. A relatively recent acceptance of marine aquaculture as a viable economic activity and therefore limited investment was made in this activity by both government and private sector;
- iv. Reluctance of financial institutions to lend money to potential farmers;
- v. Inadequate market-related services such as market information, market intelligence, information for consumers, infrastructure for marketing, marketing organisations, products or technology etc;
- vi. Limited human resource capacity in aquaculture research, management, technical and advisory services;
- vii. Administrative arrangements and processes that lead to complicated authorisation procedures; and
- viii. Absence of a national marine aquaculture policy and a supporting legislative framework.

In spite of the constraints listed above, South Africa's aquaculture production has shown an increase over the past decade, with abalone farming showing the most significant growth. From a modest beginning in 1996 when total production of farmed abalone amounted to less than 100kg, production has increased to about 900 tons - with an export value

of US\$25 million (R175 million) in 2006. South Africa is now regarded as a leading producer of cultured abalone and this sector of the marine aquaculture industry continues to expand, possibly due to the bigger profit margins for this high-value resource. Growth in other farming sectors of lower value such as mussels, oysters, prawns and sea-weed has been modest; hence South Africa should therefore focus on high value resources.

In order for aquaculture to achieve the objectives of the South African government such as poverty alleviation and employment, the constraints mentioned above have to be addressed. The positive livelihood impacts of aquaculture are well known internationally and include provision of rural livelihoods, better income and new or alternative employment. In South Africa the industry has the potential to create several hundred more new jobs and substantial export revenue that could be derived mainly from high value species such as cultured abalone. In addition the industry provides products for the local market (mussels, oysters and finfish). The production of a variety of sea food products could also satisfy the local tourist market that is growing significantly.

Furthermore, the development of a successful marine aquaculture industry will provide South Africa with the opportunity to play a leading role in aquaculture development. This expertise could be shared with other countries in the Southern African Development Community (SADC) region.

In terms of this policy no restrictions are proposed to be placed on foreign participation. The Department will, however, carefully monitor the industry to ensure that national objectives are not undermined, for example, skills transfer, ownership and local employment.

## **2. POLICY PRINCIPLES**

The following principles will apply in the implementation of this policy:

- a) Ensure environmental sustainability;
- b) Foster long term growth and profitability;
- c) Encourage participation and inclusivity;
- d) Promote transformation;
- e) Promote transparency; and
- f) Encourage intergovernmental collaboration

### 3. POLICY OBJECTIVES

The policy has the following objectives:

- a) To create an enabling environment that will promote the growth of marine aquaculture in South Africa and enhance the industry's contribution to economic growth;
- b) To promote transformation and broader participation in the aquaculture industry;
- c) To support and develop regulatory and management mechanisms aimed at avoiding or minimizing adverse environmental impacts; and
- d) To expand the resource base from the few species currently being farmed to a more diverse array of species.

### 4. POLICY CONSIDERATIONS

#### a) **Creation of an enabling environment**

Proposed policy measures aimed at creating an enabling environment for the development of marine aquaculture include:

- i. Encouragement of investor confidence;
- ii. Incentives for industry development;
- iii. Marine aquaculture services;
- iv. Risk management;
- v. Appropriate legislation;
- vi. Intergovernmental co-ordination;
- vii. Education, training and skills development; and
- viii. Improved communication and dissemination of information

#### ***i. Encouragement of investor confidence***

Marine aquaculture is capital-intensive activity and prospective investors require the assurance of Government's support. In addition to other initiatives of government in general, the Department will undertake two specific interventions in support of this, namely zonation and long-term rights allocations;

#### **Creating special marine aquaculture zones :**

Marine aquaculture faces competition from other land and sea use activities, both commercial as well as recreational. It is a matter of high priority, therefore, to ensure that areas (sea, land and suitable estuaries) which may be suitable for marine aquaculture development are zoned for this purpose. This will be done through appropriate legislative measures. All spheres of government will

play a key role in the establishment of special zones for marine aquaculture activities. Within a marine aquaculture zone all requirements with regard to land use planning and assessment of tolerable impacts arising from farming in a particular zone will be made in advance, thereby reducing the entry costs for applicants and minimising potential environmental impacts. It is also envisaged that the Department, in collaboration with other government departments, provinces and municipalities, will encourage the development of basic infrastructure in order to enhance the attraction of the proposed marine aquaculture zones.

### **Rights to undertake marine aquaculture**

In order to foster local and international investor confidence, rights to undertake marine aquaculture activities will be issued on a long-term (20 years) basis.

#### ***ii. Incentives for industry development***

South Africa's marine aquaculture industry faces competition from many other nations in Europe, South America and Asia. These countries may have competitive advantages in the form of highly developed technology, sheltered and enclosed bays that are well suited for aquaculture, and/or low labour costs.

DEAT shall, in collaboration with other government departments particularly the DTI and Treasury, strive to ensure that a range of financial mechanisms that are routinely employed by government to improve the competitiveness of South African industry are designed and managed so as to benefit the marine aquaculture industry. The mechanisms may include tax breaks, duties, grants, credit and other available government fiscal measures. In addition, fiscal incentives designed to improve environmental outcomes will be pursued in accordance with the draft policy paper (National Treasury, 2006).

#### ***iii. Marine aquaculture services***

The development of a successful South African marine aquaculture industry will depend on the existence of programmes that address food safety and fish health. This is especially important where access to the hygiene-conscious markets is required. The programmes include:

### **Molluscan shellfish monitoring programme**

Currently no shellfish producers are permitted to export their products to entities such as the European Union (EU) unless they have implemented the Molluscan Shellfish Monitoring Programme. In South Africa, the programme is implemented by the Department as per agreement with SABS. The programme, amongst other things, provides an early warning system for biotoxin control in the interests of public health. It is operated in accordance with international standards, protocols and quality systems that apply to food quality, food safety and public health.

#### **Animal health management programme**

A National Marine Aquaculture Animal Health Management Programme will be developed together with public and private partners, in particular the DoA. The programme will address, among other things, disease prevention and management protocols, minimum health requirements, disease outbreak management protocols, drug use standards, disease diagnosis and reporting requirements, and the control and certification of the movement of animals and products, both nationally and internationally.

#### **Provision of special diagnostic services**

The Department will facilitate the provision of special diagnostic laboratory services that will undertake microbiological, histological, biotoxin and phytoplankton studies and tests, thereby providing the necessary information to restrict the placing of toxic aquaculture products on the market.

#### ***iv. Risk management***

Marine aquaculture is an activity which is associated with high economic risk and is prone to disasters. Farmers may also have to contend with hazards such as floods, storms, as well as pollution and disease outbreak.

The policy recognises that the primary business risk rests with the farmer. The Department will however, support the farmers' own initiatives to manage such risks by promoting research and technologies that will reduce risk. Farmers will be encouraged to sign up with insurance companies that offer high-risk insurance for aquaculture affected by disasters.

#### ***v. Appropriate legislation***

Legislation pertaining to marine aquaculture is currently fragmented and does not promote investment. Appropriate legislation and regulations will be developed in order to implement measures

aimed at achieving the policy objectives. As a starting point these policy objectives shall be achieved through an amendment of the Marine Living Resources Act (1998) by the insertion of a new chapter on marine aquaculture. The amendment will take into account, accommodate and/or incorporate existing legislation that was drafted for purposes other than the regulation of marine aquaculture, but which currently impacts on the establishment or management of marine aquaculture activities.

Furthermore an audit of existing legislation shall be undertaken to identify bottlenecks to the development of the industry. On that basis, appropriate legislative or policy interventions will be made.

#### ***vi. Intergovernmental coordination***

Currently national and provincial departments as well as local government municipalities have different mandates that impact, or have the potential to impact on the marine aquaculture industry.

#### **Land use planning**

The mandate of the municipalities includes designation of the land uses in the areas of their jurisdiction. The Department will work with municipalities to facilitate designation of land for marine aquaculture purposes.

#### **Streamlining of authorisation process**

Administrative procedures for processing of applications for obtaining authorisation can be complicated. The ultimate objective of this policy in this regard is to streamline authorisation procedures. In its role as the lead agent for marine aquaculture, DEAT will coordinate the efforts of other national and provincial departments such as DWAF and DLA by establishing a consultative structure, the Marine Aquaculture Advisory Forum (MAAF) at national level in which the relevant provincial and local authorities will be represented. For example the function of DWAF is water resource planning and permitting with respect to marine aquaculture in estuaries, while DLA will play an important role in the identifying and acquisition of suitable sites for land-based operations. NGOs and industry will also be represented in the Forum

Existing and prospective farmers will apply to a single agent for marine aquaculture, DEAT. The Department will obtain a recommendation from the MAAF for authorizations. It is in this way

that cooperation within and between the three spheres of government will be encouraged.

#### **Facilitation and promotion**

The Department shall play a facilitative role by coordinating the activities relating to the promotion of marine aquaculture activities involving other departments. Departments and institutions that may become involved in the development of marine aquaculture include the DST, for research and technologies development, the DTI for capital investment, trade and skills development (including marketing), Treasury for other incentives, and financial-related matters.

#### ***vii. Education, training and skills development***

Successful marine aquaculture requires the availability of highly skilled (general and specialised) people at all levels, across a wide range of disciplines such as engineering, environmental management, planning, transport, education, animal health food production and processing, marketing, and scientific and technological research. Currently opportunities for academic or technical training in aquaculture are few and limited to urban areas.

To address these challenges the Department shall in consultation or partnership with institutions of higher learning, skills development agencies such as SETAs and other key departments (e.g. DST and DTI), facilitate the development of strategies and implementation of activities necessary to realise the provision of human resources required for this sector.

Training required shall include the following categories; practising fish farmers, fish farm technicians, advisory workers. A detailed skills audit will have to be undertaken to inform a more extensive training programme. Training will be made available through partnerships with educational and government institutions, public-private-partnerships (PPPs) where on-site hands on training will be provided. Training will also be provided through international partnerships and organisations.

#### ***viii. Improved communication and dissemination of information***

The policy identifies the need to improve communication and dissemination of information between the Department and stakeholders. The department will promote knowledge transfer and

strengthen networks with stakeholders, including universities, industry, communities and NGOs. Information for the industry and other stakeholders will be made available through publications, electronic media, industry liaison forums etc. The information will include both technical (new techniques and equipment) and non-technical (markets, government legislation, regulations, policies etc). The marine aquaculture industry will be encouraged to form representative industrial bodies with which the Department can liaise and disseminate information on a regular basis.

b) **Transformation and broadening of participation**

Few Previously Disadvantaged Individuals (PDIs) own or are involved in aquaculture operations at a senior management level. Furthermore, marine aquaculture is a capital-intensive activity that SMMEs (entities with annual turnover of less than R5 million) may find difficult to undertake due to difficulty in acquiring finance. In addition, potential new entrants may lack the required technical and management skills to operate sustainable businesses.

The elements to drive internal transformation of large scale commercial operations and support for SMMEs shall include the following:

**Promotion of internal transformation**

The Department will promote transformation and broader participation by encouraging the internal transformation of existing entities. In the allocation of any limited public resources (including the allocation of land, estuaries-space or sea-space zoned for marine aquaculture) preference will be given to those entities that are able to demonstrate meaningful transformation in accordance with the DTI's codes on BBBEE.

**Access to finance**

There are programmes that already exist within the DTI that are aimed towards the development of incentive schemes and financial facilities for marine aquaculture producers. The Department will facilitate access to finance for emerging aquaculture farmers in collaboration with the DTI and other relevant agencies.

**Partnerships**

The Department will support various initiatives in support of SMME development. Such initiatives might include developing incentives that would encourage established aquaculture operators to support

emerging SMMEs. The promotion of SMMEs could also be achieved through the establishment of Public Private Partnerships (PPPs). In addition, programmes to empower communities using vehicles such as co-operatives, joint ventures, technical assistance will be supported to promote aquaculture in rural, peri-urban areas and fishing communities. Emphasis will be put on job creation and community ownership of such ventures.

#### **Establishment of hatcheries**

In any livestock industry, access to best performing stocks is critical for reducing the costs of production. In the marine aquaculture industry, hatcheries are expensive to establish and require technical expertise to run. Most successful entities have established in-house hatcheries or import juvenile organisms. The participation of SMMEs in the sector, therefore could be inhibited by a lack of resources to establish hatcheries or to source spat from elsewhere. The Department will support the establishment of hatcheries with a view to supplying the industry (particularly SMMEs) with a reliable source of fingerlings and spat.

#### **c) Control of environmental impacts**

All forms of aquaculture have the potential to impact negatively on the environment. Impacts may be biological, chemical or aesthetic. Biological impacts include the spread of diseases and parasites from farmed animals to the wild, effects on other species resulting from genetic interaction etc. Chemical impacts include nutrient enrichment of coastal waters, accumulation of therapeutic chemicals, depletion of dissolved oxygen etc. If they are not properly managed, these impacts have the potential to impact on the integrity of the environment and human health.

In order to minimise the risk or the intensity of negative environmental impacts, the Department will only approve applications for which an environmental impact assessment (EIA) has been done as outlined in the National Environmental Management Act 107 of 1998 and its regulations. The principles outlined in NEMA shall form part of the basis for decision-making when applications are evaluated.

Research will be directed towards the development of technologies that are likely to have less negative impact on the environment. The integrated aquaculture approach will be supported with the intention of minimising environmental impacts. A good example of integrated

aquaculture is the culture of abalone and seaweed together in the same system.

Some alien species are attractive candidates for marine aquaculture in South Africa due to their high value and fast growth rates, or because they are already established in other countries as species suitable for marine aquaculture. Farming with these species could be considered, as long as a detailed risk assessment process is undertaken as prescribed in the NEMBA and applicable regulations.

In cases where there is limited information about a species, impact studies will be carried out and codes of practice and sector guidelines will be used to minimize risks.

South Africa will abide by the FAO Code of Conduct on Responsible Fisheries and the guidelines laid down therein, as well as the FAO Technical Guidelines for Aquaculture Development, or relevant provisions of the SADC Protocol on Fisheries.

**d) Research aimed at expanding of the resource base**

Marine aquaculture in South Africa is currently based on a relatively limited number of species. It is dominated by the cultivation of abalone, although other species such as oysters, mussels and prawns are also farmed. Presently, candidate species, such as eel, rock lobster, kob, yellow tail, grunter, tuna, turbot and seaweed are being investigated by the Department and industry.

The development of marine aquaculture technology requires intensive and sustained capital consequently research should focus more on high value resources. Some businesses are SMMEs and may not be able to invest in research projects on the scale required. In all countries where marine aquaculture has experienced rapid growth, governments have facilitated the provision of financial assistance, management and an appropriate institutional environment to drive research and technology development. Similar interventions will be necessary to drive the development of marine aquaculture in South Africa.

Through this policy, research expertise and funding will be harnessed in government, the private sector and academic institutions with the purpose of identifying or generating information about a range of species that may be suitable for marine aquaculture in South Africa. In addition, the development of

improved or new farming technologies that may be suitable for local environmental conditions will be promoted; for example, sea-based farms in which fish are penned in floating or submerged cages made of netting and anchored in the shallow coastal zone.

Suggested research and technology development programmes include:

- i. Marine aquaculture/environment interaction;
- ii. Abalone culture support programme;
- iii. Integrated aquaculture;
- iv. Finfish technology platform programme;
- v. Finfish cage culture development programme;
- vi. Biotechnology programme;
- vii. Seaweed research;
- viii. Commercial species diversification programme;
- ix. Nutrition; and
- x. Animal Health programme.

New marine aquaculture ventures, including sea ranching, will be based on technology ranging from less sophisticated to highly sophisticated, all of which are equally eligible for encouragement in terms of this policy.

In conclusion it is appropriate that research attention be given to monitoring the social and economic impacts of marine aquaculture in order to assess its contribution to the country's economic development, in particular the creation of sustainable employment

## 5. GRANTING OF RIGHTS

The Department will grant a right for a period not exceeding 20 years. Once a right is granted, a permit will be issued, subject to conditions, for a specified period not exceeding two years. Applications may be lodged with the Department at any time but will be assessed and adjudicated twice a year by the Marine Aquaculture Working Group in consultation with MAAF, which will then make recommendations to the Department. Among other criteria that will be used when assessing the applications, shall be; a) job creation (number of jobs per tonne), and investment (Rands per year) and b) transformation, including BBBEE objectives. Applicants will be given up to three years to exercise the right, failing which the right will be revoked.

## 6. MONITORING AND ENFORCEMENT

Rights and permits shall be issued with conditions, which may either be designed to avoid conflict with other resource users or to protect the environment. The existing monitoring programme will be strengthened and the capacity of the Department to implement it will be increased. Appropriate Environmental Quality Standards, guidelines, penalties, monitoring, compliance, enforcement systems, will be developed. To ensure compliance, all lease areas/sites will be subject to physical inspections annually, and the lease agreements will remain in place for as long as all performance requirements and obligations are met by the aquaculture farmers.

## 7. IMPLEMENTATION STRATEGIES

The approved policy will be implemented through departmental and other structures with the requisite resources. All officially commissioned industry or structure plans will be aligned with the policy on a national, provincial and local level. This will set the stage for developing a national MADP for marine aquaculture. The resultant MADP, sector specific guidelines and the policy will be used in the formulation of a legislative and administrative framework for the marine aquaculture industry. This will lead to the establishment of improved institutional arrangements.

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