



# SEYCHELLES NATIONAL AQUACULTURE POLICY

---

2018-2022





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Seychelles has a proud history of being keenly aware of the importance of its beautiful yet fragile environment. Article 38 of the Constitution of Seychelles states that it is “the right of every person to live in and enjoy a clean, healthy, and ecologically balanced environment,” and that the state undertakes the responsibility of instituting measures to protect, preserve, and improve the environment and to ensure the judicious and sustainable usage and management of Seychelles’ natural resources. Article 40 of the Constitution of Seychelles dictates that “it shall be the duty of every citizen of Seychelles to protect, preserve, and improve the environment.” The Government of Seychelles has furthered this dedication by enacting several policies to ensure the long-term protection of the environment. The first national Environmental Management Plan (EMP) was prepared in 1989, resulting in the EMP of Seychelles (EMPS) 1990-2000. The success of the EMPS 1990-2000 led to the second-generation action plan, viz. the EMPS 2000-2010. The EMPS 2000-2010 was closely aligned to environmental and sustainability principles, emerging from the UNCED Rio Summit in 1992 and was superseded by the National Biodiversity Strategy and Action Plan (NBSAP) (2015-2020). Both of the decade long environmental management plans resulted in significant advances in environmental legislation, conservation and management actions, capacity building and outreach. Following closely on the heels of the EMPS 2000-2010, the Government published the Seychelles Sustainable Development Strategy (SSDS) 2012-2020.

The vision of the SSDS (2012-2020) is “To contribute to the realisation of the nation’s economic, social and cultural potential through an innovative, knowledge-led approach, being mindful of the need to conserve the integrity of the Seychelles natural environment and heritage for present and future generations”. It follows that environmentally responsible production of aquaculture products, coupled with the green and ecologically sustainable image of the country, provides Natural Strategic Advantage for marketing farmed aquatic products from the Seychelles globally.

The SSDS is one of the cornerstones of the Seychelles National Aquaculture Policy (SNAP), which aims to guide the development of the sector in a manner congruent with the 'triple bottom line' objectives of ecologically sustainable development (economic prosperity, environmental quality and social justice).

Seychelles has a relatively long history of marine aquaculture. A prawn farm on Coëtivy was established in 1989 by the Island Development Company (IDC) and the Seychelles Marketing Board (SMB) and managed by the SMB. The farm was large, consisting of two hatcheries and around 200 ponds and occupying an area of around 86 ha, with a workforce of around 350 people. Prawn feed was produced on Mahé and this feed was also exported to Madagascar and elsewhere. Production of *Penaeus monodon* (Black Tiger Shrimp) peaked at 1200 tonnes per annum in 2004, but then declined to just under 400 tonnes. Disease free broodstock was imported from Madagascar and Mozambique. The product was held in high esteem internationally and locally. For various, mainly economic, reasons the farm was closed down in 2008. An integrated land use plan has since been prepared for Coëtivy by the IDC, which includes prawn farming albeit at a smaller scale.

Pearl (oyster) farming in Seychelles was started in 1980 and continues on Praslin in the Curieuse Marine National Park. Black lipped (*Pinctada margaritifera*) and winged oysters (*Pteria penguin*) are farmed for the production of round half pearls, respectively. Nuclei are imported from Japan and Australia and implanted by foreign specialists. Harvesting of round pearls occurs 2 - 3 years after implantation and their size varies from 8 to 12mm. Average nacre thickness is 1.3 mm and the colour varies from black, greenish-black to grey. Wild spat collection occurs throughout the year, although peak settlement occurs in October. The concession covers an area of around 19ha. Giant clams (*Tridachna maxima*) were also produced on the pearl farm for the ornamental trade but high transport costs led to the termination of the clam operation.

Despite these initiatives, aquaculture did not develop further in the Seychelles. This was largely a consequence of the country being unaware of opportunities and a historically bountiful supply of fish that precluded the need for alternative forms of fish production.

This changed in 2007 when ReCoMaP commissioned a rapid assessment of the potential and desirability of aquaculture in several WIO countries. Seychelles was one of the target countries of the project. Based on the strength of the findings of this assessment the Seychelles Fishing Authority (SFA) (with the assistance of ReCoMaP) in 2009 commissioned a more comprehensive Scoping Study to assess the potential for aquaculture in greater detail. The Scoping Study included preliminary assessments of potential sites, markets, fish price, candidate species, availability of infrastructure as well as institutional and human resource capacity and defined the need for



and the scope of a Master Plan for the rational development of the sector. To realize the potential of aquaculture in the Seychelles, the Cabinet of Ministers, in April 2009, sanctioned the development of a Mariculture Master Plan (MMP). In May 2011 the SFA commissioned the MMP with the overall goal “To enable Seychelles to develop a sustainable mariculture sector that is integrated into the country’s economic vision and respects the unique and sensitive nature of the marine environment”, underpinned by enabling legislation, efficient institutional structures, well trained human resources and attractive incentives for foreign direct investment. The SFA adopted a phased approach for the development of the MMP. The MMP process commenced in May 2011 with a stock-taking and diagnostic survey. The project was interrupted in September 2011 and resumed in July 2013 and was then completed in a further four, 6-month long, phases at the end of January 2016. The proposed aquaculture developments were then subject to a comprehensive environmental and social impact assessment (ESIA), which commenced in February 2016 and was submitted for evaluation to the Ministry of Environment, Energy and Climate Change in December 2016. Environmental authorization to proceed with aquaculture in the Seychelles was granted by the Ministry in early February 2017, subject to certain conditions and the ESIA associated Environmental Management Plan (EMP).

The MMP process has produced a comprehensive platform for the practical launching of an aquaculture industry. This includes the planned “Aquaculture and Sea Ranching Regulations” under the Fisheries Act 2014, a single entry / exit aquaculture license application system, standard and special conditions for aquaculture licenses, a suite of Aquaculture Standards for the various types of farming opportunities, designated land and sea-based aquaculture development zones and biosecurity protocols.

Financially feasible aquaculture investment opportunities on the inner and outer Islands include: finfish cage culture, sea cucumber and tiger prawn farming in ponds, sea urchin farming, crab fattening, farming of ornamental fish, production of hard and soft corals, and ranching of sea cucumbers and other suitable species. The Seychelles has a rich marine biodiversity and it is most likely that other suitable and financial feasible farming opportunities will be identified, such sponges and other invertebrates for pharmaceutical, nutraceutical and /or cosmetic purposes.

Finfish farming in cages around the inner and outer islands is a means to mitigate climate change impacts on fisheries by augmenting the local but declining supply of preferred fish. Pearl oyster farming in Seychelles is undertaken using anchored surface,



mid-water or bottom long-lines. Similar systems can also be used for the farming of other filter feeding mollusks or sponges.

Ranching of sea cucumbers, or other suitable species such as sea urchins or scallops, either separately or in integrated multi-trophic aquaculture (IMTA) systems is viable. It entails the release of hatchery reared juveniles into suitable environments and their ultimate harvest for economic gain by an operator who has leased an area for ranching purposes.

The IDC is entrusted with the management and development of 14 of the outer islands. All are coralline except Silhouette, which is granitic / volcanic and is located within the inner island group. The IDC has identified aquaculture as an economic diversification strategy for some of the islands under its management and several promising aquaculture opportunities have been identified for these islands.

Stakeholder involvement was central to the development of this policy and will also be central to its implementation. Two stakeholder workshops were convened to solicit inputs from the public and the private sectors and civil society.

Mindful of the exploitation levels and catch rates of fish stocks in the artisanal fishery the SNAP has been developed within the context of the National Food and Nutrition Security Policy, the Seychelles Sustainable Development Strategy (SSDS) 2012 - 2020, the National Development Strategy (NDS) 2015 – 2019, as a central component of the Blue Economy, the National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020, the ecosystems approach to aquaculture development , and the need for economic diversification in the country.

The Blue Economy Strategy underscores the economic potential of Seychelles' vast Exclusive Economic Zone of just under 1.4 million km<sup>2</sup>. More specifically, the strategy integrates conservation and sustainable use of ocean resources, the development of aquaculture and sea ranching, oil and mineral wealth extraction, bio-prospecting, sustainable energy production and marine transport, as well as branding Seychelles as a 'Blue' tourism destination. Fundamental to its approach, the blue economy propagates a principle of equity, which ensures that the people of the Seychelles optimize on the benefits received from the oceans that surround them while also protecting them. By harmonizing ecosystem-related economic values into economic modelling, the blue economy has the potential to pioneer a transformation to a new paradigm of sustainable development that appreciates oceanic ecosystem services and products as drivers of development, rather than commodities to be exhaustively exploited .

Government is further mindful of the risks and challenges of sustaining its largely import-based food security. These include international food price volatility, uncertainties in global food systems, climate change, local land and water allocation and use policies, natural disasters (tsunami, storms, volcanic eruptions), piracy at sea, regional conflict and war, economic disruptions of the tourism and fisheries sectors, energy prices on cost of production, labour policy and other unforeseen global occurrences like the volcanic ash that disrupted international trade/travel flows in early 2012.

Moreover, Seychelles is also following through with its resolve and commitment to the CAADP Compact to allocate to agriculture and fisheries, including aquaculture, the necessary resources for improved performance and productivity – from commercially intensive



production systems through to smaller scale operations across the entire fisheries and aquaculture value chain.

The fisheries sector, comprising the industrial large-pelagic fishery, the semi-industrial fishery and the artisanal fishery, is one of the most important pillars of the country's economy. Fish plays a vital role in the nutrition of the people. Per capita consumption of fish is high, variably reported to be between 56 and 65 kg per annum and fish contributes 35-40% of protein consumed by Seychellois. The locally consumed fish is obtained mainly from the artisanal fishery with a small contribution from the semi-industrial fishery. The artisanal fishery, which is still an open access fishery, targets a diverse group of species ranging from hand-line caught demersal and semi-pelagic fish, small semi-pelagic fish caught in encircling nets, small and juvenile demersal fish caught in traps, and lobsters and octopus. Total catches in the artisanal fishery from 2006 to 2016 have declined, on average, from over 4000 to below 3000 tonnes per annum .

Most of the demersal species in the semi-industrial fishery and nearly all of the species that comprise the artisanal catch are either fully exploited or over exploited . This means that even if the stocks were managed sustainably, the artisanal fishery will not be able to meet the future demand for fish. To maintain the present per capita consumption rate means that the future deficit will have to be made up by imports and aquaculture.

In view of the above and the need for economic diversification, Government recognizes the need for the rapid but orderly and responsible development of aquaculture in the Seychelles. To this end the President of the Republic of the Seychelles, in April 2017, established the High Level Aquaculture Committee (HLAC), the mandate of which, through five sub-committees, was to provide an inter-departmental focus to coordinate policy, align legislative

and institutional structures, drive and track aquaculture development progress and make recommendations to Cabinet on the early-stage development of the sector, including;

- a. The finalization of a legislative framework to ensure robust governance of the sector;
- b. The structuring of institutional roles and responsibilities;
- c. Funding of sector development costs;
- d. Attracting private and institutional investment capital to pioneer the sector;
- e. Promoting public and institutional awareness of aquaculture;
- f. Land allocation and developing infrastructure required to support the expansion of the sector;
- g. Creating opportunities for local investment and participation throughout the aquaculture value-chain.
- h. Human resource development
- i. International collaboration

Moreover, Government is fully aware of the potential environmental impacts of aquaculture and for this reason supports the development of the sector within the context of the “Ecosystems Approach to Aquaculture”. This approach responds to three principles:

- i) Aquaculture should be developed in the context of ecosystem functions and services (including biodiversity) with no degradation of these beyond their resilience capacity,
- ii) Aquaculture should improve human well-being and equity for all relevant stakeholders; and
- iii) Aquaculture should be developed in the context of (and integrated with) other relevant sectors.

## LEGISLATIVE AND ADMINISTRATIVE FRAMEWORK

The Fisheries Act of 2014 and the “Aquaculture and Sea Ranching Regulations” provide the basic legal framework for the development and management of environmentally responsible and sustainable aquaculture and sea-ranching in the exclusive economic zone of the Republic of Seychelles.

Part III, Sub-part 7, Section 34 (1) of the Fisheries Act of 2014 stipulates that the SFA shall manage the development of aquaculture and sea-ranching in the Seychelles on the basis of an Aquaculture Sector Development Plan.

The Act authorises the Authority to issue licenses that are subject to compliance with the regulations. In summary, the Act as it stands:

- Delegates the management of the development process to the Seychelles Fishing Authority;
- Requires that the Aquaculture Sector Plan is used to manage the development of the Sector;
- Ensures that no aquaculture may be undertaken without a license granted by the Seychelles Fishing Authority;
- Requires that license holders operate according to the Regulations;
- Indicates conditions associated with licenses.

The Aquaculture and Sea Ranching Regulations, and the adjunct Seychelles Aquaculture Standards were developed in accordance with the Act and these provide the rules for issuing licenses and the conditions of such licenses and are the legal instruments that guide and control the development of the sector in an environmentally responsible and sustainable manner. Licenses granted under authority of the Act are subject to all provision of the Act.

The “Aquaculture and Sea Ranching Regulations” serve to underpin the Aquaculture Sector Development Plan, which aims to:

- Stimulate growth in the aquaculture sector including sea-ranching
- Realise the environmental and market potential of the aquaculture sector
- Maximise the socio-economic contribution of aquaculture for the people of Seychelles
- Establish an enabling institutional environment for the aquaculture sector to grow
- Develop appropriate aquaculture technologies
- Develop the necessary industry support services
- Develop the required human capacity for the development of the sector.

In addition, there are several acts that the sector must also comply with. These are the “Environment Protection Act 2004” that provides for the protection, preservation and improvement of the environment and the regulation of effluents.

The “Animal and Plants Biosecurity Act 2014” and the “Animal (Diseases and Imports) Regulations for Biosecurity 2014” in so far as the importation of any marine animal or plant is concerned.

“Environment Impact Assessment Regulations 2016” that triggers the requirement for EIAs and that stipulates that environmental authorization is granted by the responsible Ministry before any aquaculture development and or operations can commence.

“National Parks and Nature Conservancy Act 1969” and the “Seychelles’ Protected Areas Policy, 2013” govern the establishment and operations of aquaculture enterprises in multi-use marine protected areas.





The “Export of Fisheries Products Act 2010” provides that exports may be undertaken only from aquaculture processing establishments that operate under a permit granted by the CEO of the Seychelles Bureau of Standards. The Act details banned substances, permitted veterinary medicines, unfit products, monitoring and reporting. The Act also serves the important role of ensuring that export aquaculture products produced in the Seychelles are of a standard that will uphold the Seychelles reputation for quality in external markets.

The sector will also be developed in accordance with relevant international and regional agreements to which Seychelles is a signatory. Those having a bearing on aquaculture operations include:

- The Nairobi Convention
- The Convention of Biological Diversity (CBD); including its subsidiary Nagoya Protocol on Access to Genetic resources and benefit sharing
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Codex Alimentarius



## IMPORTANCE OF AQUACULTURE

The Fisheries Act of 2014 and the “Aquaculture and Sea Ranching Regulations” provide the basic legal framework for the development and management of environmentally responsible and sustainable aquaculture and sea-ranching in the exclusive economic zone of the Republic of Seychelles.

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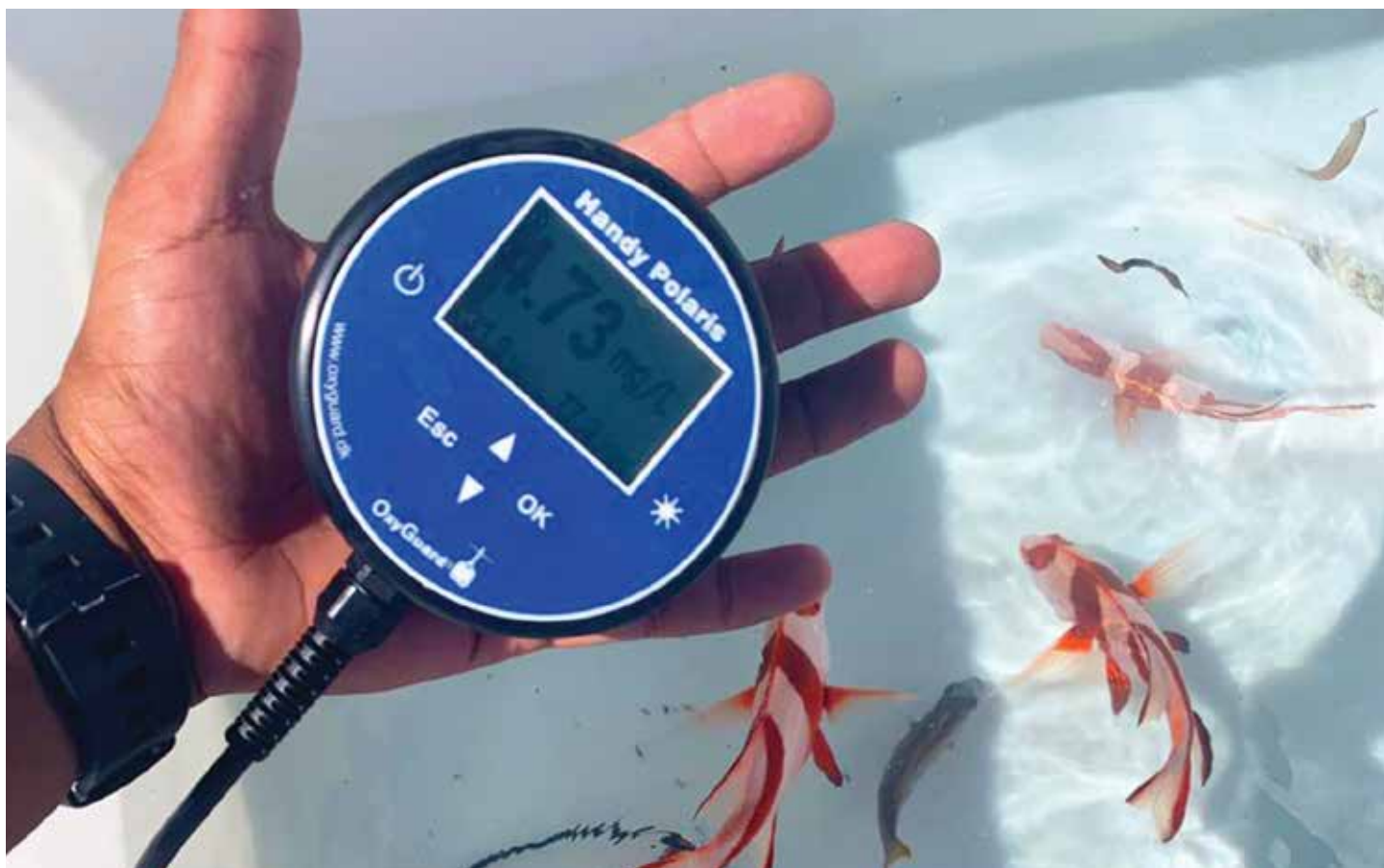


The principal challenge for the Government is to ensure that the development, operation and management of aquaculture in the Seychelles is ecologically sustainable and internationally competitive and that the new sector generates economic and social benefits for the Seychelles, under the provisions, where appropriate, of the Fisheries Act 2014 and the “Aquaculture and Sea-Ranching Regulations” and the adjunct Seychelles Aquaculture Standards.

Other challenges that face the early development of the sector in the Seychelles include:

- The availability of suitable sites on land and at sea;
- Establishment of a world class research and development facility;
- Development of the required scientific and technical capacity;
- Mitigating the impact of aquaculture on the marine and terrestrial environments (inclusive of site location and preparation, discharge of effluents, use of chemicals and the introduction of hatchery reared fish that may result in the dilution of genetic diversity;
- Cross-sectoral issues such as perceived loss of visual amenity and exclusivity for tourist operators through the establishment of aquaculture operations;

The local market for aquaculture products in the Seychelles will be small and would not provide a profitable outlet for the products. Most of the products will therefore be exported. Gaining access to this highly competitive international market is the biggest challenge facing investors, but this will be achieved through enabling Government policies.



The vision for aquaculture in the Seychelles is:

**A small but internationally competitive, knowledge based industry, contributing to local food security and supplying international niche markets for high value fish products, which is guided by international best management practices in accordance with the principles of the Ecosystems Approach to Aquaculture and ecological sustainability.**

The Regulator will ensure that all investors in aquaculture on the inner and outer islands operate in a responsible manner and to respect the environment in which they work.

To remain relevant, the policy will be reviewed from time to time and revised to take into account changing circumstances and new/emerging economic opportunities and the status of the natural resource base to ensure the future sustainability of the sector.



## GOALS AND OBJECTIVES

The overall goal of the policy is:

***To guide an effectively managed and environmentally responsible aquaculture industry that contributes towards food security and the creation of wealth in the Seychelles.***

The policy has the following objectives:

- Stimulate growth in a new industry;
- Promote good governance for the aquaculture sector which will enable the industry to develop to its full potential with a supportive regulatory framework;
- Seek environmentally responsible investors to develop the industry;
- Realise the market potential of the aquaculture sector;
- Maximise the socio-economic contribution of aquaculture;
- Promote and provide an enabling platform for development of aquaculture at small, medium and large scales;
- Develop an enabling institutional environment that facilitates investment in aquaculture;
- Adopt, adapt and develop suitable and sustainable aquaculture technologies;
- Develop the necessary industry support services;
- Implement an effective Human Resources capacity development programme for the future well-being of the sector;
- Improve public awareness of the benefits and potential of aquaculture for the country;
- Promote aquaculture as an important element of integrated coastal management;
- Develop an aquaculture industry compatible with responsible stewardship of the coastal regions and their resources;
- Establish aquaculture as a supplementary source of fish for domestic markets;
- Encourage future operators to co-manage the sector with the Regulator





At present aquaculture in the Seychelles is nascent. Hence, the policy is broad and developmental in nature and addresses matters of a general, as well as of a specific nature. The general policy matters are those that address governance, ecological sustainability and responsible aquaculture practices. The more specific matters address farming of fish that are fed, the farming of filter feeding (non-fed) organisms and for sea-ranching and land based aquaculture activities.



## RESPONSIBLE AUTHORITIES

The Seychelles Government is the responsible body for policy development and oversight. The policy leads to the development of the Aquaculture Sector Development Plan by the Ministry of Fisheries and Agriculture. The Sector Development Plan serves to guide the implementation of the policy by the Authority responsible for aquaculture.

The Government recognizes that local and international framework conditions change over time and that the aquaculture sector in the Seychelles, as elsewhere, will face an altered suite of challenges, posed by amongst others by, climate change, globalization, demographic changes on the Islands and increasing pressure on, and demand for, natural resources. The HLAC and its Sub-Committees will therefore review the SNAP from time to time as required for it to remain relevant.



### ***Policy 1: Policy of Good Governance in the Aquaculture Sector***

Regulation in the aquaculture sector should be proportionate and fit for purpose and applied in a fair, equitable and efficient manner that embodies the values of transparency, accountability, ethics, animal welfare and stakeholder participation. The beneficial outcomes from the aquaculture sector shall be equitably shared to the good of all Seychellois and sustainably delivered within a culture of best practice and continuous improvement.

The Seychelles Fisheries Act (2014) provides for the appointed Authority to manage the development of aquaculture in accordance with the Aquaculture Sector Development Plan. Aquaculture operations are subject to Regulations that include the requirement for a License that in turn may contain further appropriate provisions and reference Standards. Therefore, to achieve the objectives of this policy and to ensure good governance the Government, through the Authority, will:

- Promote aquaculture development on the basis of the Ecosystems Approach to Aquaculture, the FAO Code of Conduct on Responsible Fisheries and the guidelines laid down therein, as well as the FAO Technical Guidelines for Aquaculture Development, as well as the relevant provisions of the SADC Protocol on Fisheries;
- Support the refinement of the Regulations and develop co-management strategies for aquaculture in the Seychelles;
- Remain abreast of global Best Management Practices in marine aquaculture and to inform aquaculturists of new developments;
- Encourage the development and adoption of voluntary codes of conduct;

- Ensure that all sea based aquaculture or ranching activities will be restricted to ADZs or to inshore areas that have been identified as being suitable for the activity by the Authority and which constitute areas where there will be no user conflict;
- Promote and support the adoption of global BMPs by aquaculturists so that the industry is ecologically sustainable and becomes internationally competitive;
- Develop and implement a monitoring and evaluation process to oversee delivery of policy goals;
- Undertake an annual and end-term review of policy implementation.

## ***Policy 2: The Sustainable Environmental Policy for Aquaculture***

The aquaculture sector shall be developed in harmony with the environment and with priority applied to issues of biodiversity and to other aquatic resource users. Aquaculture shall be developed in accordance with The Ecosystem Approach to Aquaculture and a conservative, phased and adaptive expansion strategy applied to ensure that capacity limits are practically established and never breached. All negative impacts to ecosystems, cultural heritage sites or valued-scenery shall be rigorously avoided.

Several economic sectors in the Seychelles rely on its pristine, unpolluted marine environment. For aquaculture, this environment is the basis to the strategic advantage of the sector and compliance with the Regulations and Standards is critical to maintaining both the natural resource and the confidence of the market.

Delivering environmental sustainability is predicated on the establishment of capacity limits that consider the broader ecosystem. To establish a solid baseline to capacity limits an ESIA and a comprehensive Environmental Management Plan (EMP) has been completed for the Inner Island Aquaculture Development Zones that all operators must comply with and be audited against. This policy, as implemented in accordance with the Regulations and EMP, will:

- Ensure that the sector is developed within conservative capacity limits from the outset;
- Limit sector expansion under a phased approach that adapts limits based on data records from existing operations;
- Promote ecologically sustainable practices and technologies that minimise waste and environmental damage;
- Ensure that, with the exception of penaeid prawns on Coëtivy, the farming of any species not indigenous to a particular island or island group will not be cultivated on that island or island group;

- Ensure that the cultivation or development of genetically modified organisms will not take place on any island or within the EEZ of the Seychelles;
- Facilitate the use of renewable energy sources in aquaculture, particularly solar energy;
- Promote the adherence to the “OIE Aquatic Animal Health Code” (the Aquatic Code) of 2014 of the World Organisation for Animal Health;
- Institute and manage an animal health programme in line with the requirements of the Aquatic Code;
- Support the training of veterinarians in fish health management;
- Undertake research to improve the understanding of marine wildlife diseases, parasites, pathogens and vectors in the Seychelles;
- Participate in regional initiatives to improve the understanding of diseases and fish / environment interactions in aquaculture;
- Promote and participate in the development of Regional Aquaculture Standards that promotes the health of farmed fish in the Western Indian Ocean region.





### ***Policy 3: Policy on Co-ordinated Support for the Development of the Aquaculture Sector***

The aquaculture sector shall be developed with the holistic support of government departments and agencies. Co-ordinated interventions shall ensure that enabling infrastructure, legislation and funding solutions are developed to ensure that the strategic outcomes of the Aquaculture Sector Plan are achieved.

In recognition of the complexity surrounding the development of a new sector, support activities will require aligned inter-departmental efforts by government. Multiple cross-cutting issues are important to the establishment of the sector and must be effectively addressed through the co-ordinated approach, including:

- The identification and securing of land-based sites;
- Skills development and transfer;
- Planning for alternative solutions to meet energy requirements;
- Provide the capital and annual recurrent costs for the implementation of the sector development plan;
- Support the Authority in seeking financial support from international partners for the development of advanced aquaculture research facilities;
- Support the Authority in seeking financial support from international partners for specific R&D programmes;
- Promote training in appropriate science and technology disciplines.

#### ***Policy 4: Investment Policy for the Aquaculture Sector***

The aquaculture sector shall be incrementally developed to a scale that will deliver the desired strategic outcomes for the Seychelles, namely national economic diversification, bolstered resilience to external shocks and improved food security. Responsible domestic and international private sector investment shall be attracted to capitalise both small and industrial scale operations to achieve a globally competitive sector that will result in quantifiable social and economic benefits.

Recognising the ramifications of aquaculture for food security, employment, business development and for the social good and also acknowledging that the development of a new industrial sector requires attention in selecting the correct private sector partners to drive the initiative, taking care of the environment, and facilitating the involvement of small and medium scale farmers the Government, through the Authority, where applicable, will:

- Promote, encourage and facilitate private sector investment in aquaculture and sea ranching;
- Promote and support in particular the development of sustainable small and medium scale aquaculture operations to increase the supply of fish on the local market;
- Facilitate investment in large scale, export orientated aquaculture;
- Promote and support development of the aquaculture value chain by local entrepreneurs
- Promote the profile of the Seychelles as an aquaculture investment destination of choice for environmentally conscious entrepreneurs;
- Encourage farmers to participate in decision making processes, monitoring procedures, and research.

### ***Policy 5: Policy on Inclusive Participation in the Aquaculture Sector***

The aquaculture sector is to be developed to the good of all Seychellois. Opportunities throughout the aquaculture value-chain shall be equitably accessed and provisions made to ensure that local employment is maximised and participation in ownership is enabled, including the reservation of select zones for exclusive use by Seychellois.

The benefits accrued through sector development extend throughout the aquaculture value-chain. Ensuring that value-chain opportunities are made accessible to all Seychellois is an essential driver of the future success and sustainability of the sector. This policy seeks to pave the way for interventions that will achieve fully inclusive participation, including:

- The reservation of exclusive zones for local investors
- Fixing minimum levels of local participation for different value-chain activities
- Providing for skills development and training
- Establishing funding sources to support local entrepreneurs
- Promote small and medium scale aquaculture practices to enhance food security at household and community level;
- Promote aquaculture as a viable, alternative income-generating activity;
- Ensure that no restrictions are placed on foreign participation in the development of offshore aquaculture in the Seychelles;

- Collaborate to identify and establish links with the leading international research and teaching Universities and institutions and organizations to provide opportunities for young Seychellois to be trained in scientific, technical and managerial disciplines relevant to tropical aquaculture;
- Encourage the Ministry of Education and Human Resources Development, the University of Seychelles and the Seychelles Maritime Academy to provide managerial and technical training opportunities;
- Engage with the Department of Prisons to train interested inmates on Coëtivy in aquaculture technologies.

## ***Policy 6: Aquaculture Products and Markets Policy***

The aquaculture sector will produce a diverse basket of premium, value-added products to meet local demand volumes, in a manner that balances stakeholder interests, and for export to international niche markets. The quality of aquaculture products will be of a standard that upholds and reinforces the attributes of the Seychelles brand and of which the Seychelles can be justifiably proud.

The global seafood market is competitive and consumers are increasingly demanding full traceability on the source of products and the manner in which they were produced. For quality producers these market dynamics allow for strong branding opportunities and premium prices in the niche markets. It is essential that the Seychelles brand for aquaculture products is built on strong attributes and that producers are aligned to the highest standards of production and processing.

The Seychelles Bureau of Standards (SBS), through the Fish Inspection and Quality Control Unit (FIQCU), is responsible for fish inspections and setting of standards. The SBS administers the Codex Alimentarius and adheres to the SADC Regional Guidelines for Food and Safety Management.

The FIQCU is the competent authority that certifies fishery products from Seychelles and undertakes Hazard Analysis and Critical Control Points (HACCP) audits and inspections of approved establishments to ensure compliance with the Seychelles Export of Fishery Products Act (1996) and the relevant EU regulations.

Government recognises that the SBS and FIQU will, in addition to their present duties, have to also employ resources to aquaculture products as these come on stream. In order for this to be possible Government will:

- Promote and facilitate value adding of aquaculture products to maximize social benefits;
- Actively promote Seychelles aquaculture products at international trade fairs and through information systems;
- Provide the necessary fiscal incentives for producers to be competitive
- Promote domestic trade in aquaculture products;
- Encourage certification of aquaculture enterprises and support marketing campaigns of Seychelles aquaculture products;
- Strengthen the capacity of the FIQCU such that the institution is able to deal effectively with the needs of the aquaculture sector and in particular with the implementation of real time “farm to fork” traceability systems;
- Empower FIQCU to monitor the safe use of chemicals, antibiotics and other drugs of importance in aquaculture according to international Best Management Practices.

***Policy 7: Policy for the Development of Aquaculture on the Outer Islands***

The Outer Islands shall be included as a potential destination for aquaculture development in the Aquaculture Sector Plan. Aquaculture opportunities will be subject to an Outer Island Environmental Impact Assessment.

The Seychelles Outer Islands offer a diverse set of environments that could significantly add to the potential for aquaculture in terms of both volume and product diversity. In order to realise this potential, the Authority shall:

- Identify suitable aquaculture species for cultivation in the Outer Islands and undertake R&D, as required, to prepare for their commercialisation;
- Undertake an Outer Island EIA that covers priority aquaculture development sites.





### ***Policy 8: Policy on Research and Development in the Aquaculture Sector***

Seychelles aquaculture shall be competitively positioned in the international marketplace with Research and Development as a key differentiator. In particular, the development of indigenous genetic stocks, and the commercial reproduction of such species, is deemed to be of strategic national importance.

Some of the challenges facing the development of aquaculture in the Seychelles include, amongst others, the absence of appropriate research facilities, research capacity and the resources with which to establish these. Recognizing that aquaculture is a knowledge-based activity and that research is a fundamental pivot for the development of the sector the Government will:

- Facilitate the mobilization of resources for the development of advanced aquaculture R&D facilities;
- Assist small and medium scale operators with technical know-how to launch and maintain their operations;
- Promote short, medium and long-term research planning and priority setting for development of aquaculture with international partners. In particular, planning should focus on aquaculture / environment interactions, IMTA where possible, species diversification and ranching methods;
- Strengthen arrangements for delivery of aquaculture research and development findings;
- Monitor the social and economic impacts of aquaculture development;

- Identify the skills gap and capacity building needs to match the demand of the aquaculture industry and the capacity needs for aquaculture research, including; fish husbandry, induced breeding and larval rearing of marine fish, aquaculture engineering, fish nutrition and feeding technology, fish diseases and environmental control and management, HR management as well as general and financial management.



## DEFINITIONS AND ABBREVIATIONS

**“ADZ”** means an Aquaculture Development Zone, a zone that has been designated for the purposes of aquaculture on land or at sea.

**“Alien species”** means (i) a species that is not an indigenous species; or (ii) an indigenous species trans-located or intended to be trans-located to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by natural means of migration or dispersal without human intervention.

**“Aquaculture”** is defined in the Fisheries Act 2014 under Part 1 (Clause 2) as (a) the cultivation, propagation or farming at sea or on land of fish from eggs, spawn, spat, fingerling or seed; and (b) includes the rearing and ranching of fish taken from the wild or imported into Seychelles.

**“Aquaculture Standard”** means an adjunct legal directive to the Aquaculture and Sea Ranching Regulations and with which all aquaculturists must comply.

**“BMP”** means global Best Management Practice/s.

**“Biological Monitoring”** means the routine counting, testing or measuring environmental factors or biota to determine their status or condition and to assess changes over time.

**“Bivalve”** means a mollusk, such as an oyster or a clam, that has a shell consisting of two hinged valves.

**“DBS”** means the Development Bank of Seychelles.

**“EIA”** means Environmental Impact Assessment as defined in the Environmental Impact Assessment Regulations 1996.

**“EMP”** means Environmental Management Plan.

**“Ecologically Sustainable Development (ESD)”** means development that meets the needs of the present, without compromising the ability of future generations to meet their needs and which is compatible with the continuing functioning of essential ecological processes.

**“Ecosystems Approach to Aquaculture”** is a strategy for the integration of the activity within the wider ecosystem in such a way that it promotes sustainable development, equity, and resilience of interlinked social and ecological systems.

**“Ecosystem”** is a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

**“FAO”** means the Food and Agriculture Organization of the United Nations.

**“Finfish”** means a bony fish belonging to the Class Osteichthyes, as distinguished from a shellfish.



**"FIQCU"** means the Seychelles Fish Inspection and Quality Control Unit, a division of the Seychelles Bureau of Standards.

**"Food security"** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.

**"HACCP"** means Hazard Analysis and Critical Control Points. It is a systematic preventive approach to food safety from biological, chemical, and physical hazards in production processes that can cause the finished product to be unsafe, and designs measurements to reduce these risks to a safe level.

**"HR"** means Human Resources.

**"IDC"** means the Islands Development Company Ltd.

**"ICS"** means the Islands Conservation Society, funded principally by the IDC

**"IMTA"** means Integrated Multi-Trophic Aquaculture that is defined as "a system that uses various complementary groups of animals occupying different positions in the food chain and that provide the by-products, including waste, from one aquatic species as inputs (fertilizers and food) for another. In other words, farmers combine fed aquaculture (e.g., fish and shrimp) with inorganic extractive (e.g. seaweed) and organic extractive (e.g., sea cucumbers or shellfish) aquaculture to create balanced systems either for environmental remediation (bio-mitigation), economic stability (improved output, lower cost, product diversification and risk reduction) or social acceptability".

**“Impact”** means the influence or effect exerted by pressures (usually human activities) on environmental attributes, commonly ecosystems, habitats, communities, species or populations.

**“Indigenous species”** means a species that occurs, or has historically occurred, naturally in a free state in nature within the archipelagic waters of the islands, but excludes a species that has been introduced into such waters as a result of human activity.

**“MOFTI”** means the Seychelles Ministry of Finance, Trade and Investment.

**“Mariculture”** means aquaculture in the marine environment and can be used as a synonym for marine aquaculture.

**“Metapopulation”** means a population in which individuals are spatially distributed in a habitat in two or more subpopulations.

**“MFA”** means the Seychelles Ministry of Fisheries and Agriculture

**“MSC”** means the Mariculture Steering Committee that serves as a stakeholder forum for all parties with an interest in mariculture and which was established under Regulation 5 of the Marine Aquaculture and Sea Ranching Regulations.

**“NGO”** means a non-governmental organization



**“Nutrition security”** is when food security is combined with education, a sanitary environment, adequate health services and proper care and feeding practices to ensure a healthy life for all household members” (UNSCN 6th Report on the World Nutrition Situation).

**“OIE”** means the World Organisation for Animal Health with headquarters in Paris, France.

**“Pathogen”** is a disease producing organism.

**“Penaeid prawn”** means a marine prawn or shrimp belonging to the family Penaeidae, e.g. a black tiger prawn is a penaeid.

**“Population”** is a subset of individuals of a species that are characterised by geographic isolation, pattern of movement or levels of genetic difference that indicates only limited exchange with other such groups.

**“Precautionary Principle”** means that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

**“R&D”** means research and development.

**“ReCoMaP”** means the Regional Programme for the Sustainable Management of the Coastal Zones of the Indian Ocean. ReCoMaP, an initiative of the Indian Ocean Commission (IOC) and funded by the European Union,

was a regional programme for the sustainable management of the coastal zones of seven regional countries of the Indian Ocean, namely Mauritius, the Seychelles, Madagascar, the Comoros Islands, Kenya, Tanzania and Somalia.

**“Restocking”** is the release of cultured juveniles into wild population(s) to restore severely depleted spawning biomass to a level where it can once again provide regular, substantial yields. This may also involve reestablishing a commercial species where it is locally extinct due to overfishing, or release of juveniles reared in “conservation hatcheries” to help restore endangered or threatened species.

**“SADC”** means the Southern African Development Community.

**“SBS”** means the Seychelles Bureau of Standards.

**“SFA”** means the Seychelles Fishing Authority.

**“SMB”** means the Seychelles Marketing Board.

**“SNAP”** means the Seychelles National Aquaculture Policy.

**“SSDS (2012-2020)”** means the Seychelles Sustainable development Strategy 2012 – 2020.



**“Sea ranching”** is the release of cultured juvenile sea cucumbers, sea urchins, or scallops into unenclosed marine environments for harvest at a larger size in “put, grow, and take” operations. The released animals are not expected to contribute to spawning biomass, although this can occur when the size at harvest exceeds the size at first maturity, or when not all the released animals are harvested. Sea-Ranching is normally undertaken by the private sector or co-operatives in areas specifically set aside for ranching and where access is restricted.

**“Stock enhancement”** is the release of cultured juvenile sea cucumbers, urchins, fish or scallops into wild population(s) to augment the natural supply of juveniles and optimize harvests by overcoming recruitment limitation. Note that recruitment limitation is common for many coastal species with pelagic larvae in open ecosystems, even when spawning biomass is at the desired level. Restocking and stock enhancement endeavours are undertaken by the public sector for the common good of stakeholders.

**“WIO”** means the Western Indian Ocean

