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Organization of the
United Nations**

**Ministry of Blue Economy,
Marine Resources,
Fisheries and Shipping, Mauritius**

Policy for the Blue Economy in Mauritius



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List of Abbreviations

| | |
|----------|---|
| AfDB | African Development Bank |
| AFRC | Albion Fisheries Research Centre |
| BE | Blue Economy |
| BMP | Best Management Practices |
| CCAMLR | Conservation of Antarctic Marine Living Resources |
| DED | Dissostichus Export Document |
| EDB | Economic Development Board |
| EEZ | Exclusive Economic Zone |
| EPZ | Export-Processing Zone |
| EU | European Union |
| FAD | Fish Aggregating Devices |
| FAO | Food and Agriculture Organisation |
| FBOs | Fish business operators |
| FFM | Ferme Marine de Mahebourg Ltd |
| FIT | Fishermen Investment Trust |
| FITEC | Fisheries Training and Extension Centre |
| FVO | Food and Veterinary Office |
| FWF | Fishermen Welfare Fund |
| GCF | Green Climate Fund |
| GDP | Gross Domestic Product |
| ICT | Information and Communication Technology |
| IOC | Indian Ocean Commission |
| IOTC | Indian Ocean Tuna Commission |
| IRS | Integrated Resort Scheme |
| IUU | Illegal, Unreported and Unregulated |
| MARENA | Mauritius Renewable Energy Agency |
| MBEMRFS | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| MCS | Monitoring, Control and Surveillance |
| MFDC | Mauritius Freeport Development Co. Ltd |
| MOI | Mauritius Oceanography Institute |
| MOU | Memorandum of Understanding |
| MPA | Mauritius Ports Authority |
| MPA | Marine Protected Area |
| NDC | Nationally Determined Contribution |
| NOC | National Ocean Council |
| NSEPCRET | National Scheme for Emerging Project Concept Based on Renewable Energy Technologies |
| SWAC | Sea Water Air Conditioning |
| SWF | Seafarers' Welfare Fund |
| UNCLOS | United Nations Convention on the Law of the Sea |
| UNECA | United Nations Economic Commission for Africa |
| UNEP | United Nation Environment Programme |
| VMS | Vessel Monitoring System |
| WIO | Western Indian Ocean |

Preparation of this document

The Ministry of Blue Economy, Marine Resources, Fisheries and Shipping of Mauritius requested technical support from the FAO Mauritius to assist in the development of a robust and inclusive Blue Economy Policy as well as related activities. It was realised that a dedicated and holistic policy elaboration process would enable the Blue Economy to be sustainably developed leading to greater social and economic wellbeing for the people of Mauritius. Specifically, the project will assist the Government of Mauritius in implementing a participatory policy formulation process, accompanied by capacity building related to the policy. The FAO recruited a team of specialists to carry out this assignment.

This document was prepared by Dr Mitrasen Bhikajee, Mr James McCafferty, Dr Warwick Sauer and Dr Krishna Chikhuri on behalf of the Fisheries and Aquaculture Division of the Food and Agriculture Organization of the United Nations (FAO).

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In Rodrigues, the FAO acknowledges the support and collaboration of the Rodrigues Regional Assembly, the Chief Commissioner, the Commissioner for Fisheries, the Departmental Head, Mr S Sooprayen and the Scientific Officer, Mr S Perrine.

Consultative meetings were held in Port Louis and Rodrigues. A Project Steering Committee consisting of all major Blue Economy stakeholders was also established. The list of participants in the Consultative Meetings, experts who were interviewed individually and the composition of the Project Steering Committee are provided in Annex 1, 2 and 3.

Information collected from stakeholders during the Consultative Meeting and the interviews have been incorporated in this document.

Preamble

For over a decade, the Government of Mauritius has promoted the development of a Blue Economy with the objective of sustainably harnessing the economic opportunities provided by its vast exclusive economic zone (EEZ). However, despite the formation of various councils and working groups, as well as the formulation of different roadmaps and action plans, Mauritius' vision of a Blue Economy has not yet been fully realised. At the time that the Ocean Economy Roadmap was developed in 2013, the contribution of the Blue Economy to national gross domestic product (GDP) was around 10.8 percent and the stated aim was to increase this to 20 percent by 2025. At the time of writing, the Blue Economy contributes around 9.8 percent to GDP (Statistics Mauritius, 2023).

In recognition of the significant potential of and the need to stimulate the Blue Economy in Mauritius, the Food and Agriculture Organisation (FAO), in collaboration with the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (MBEMRFS) and other stakeholders, have developed this policy paper. The aim of the policy paper is to provide a series of policy statements that will guide the development and advancement of the Blue Economy in Mauritius. It serves as a strategic document that outlines the vision and key principles for the sustainable growth of economic activities related to the ocean. The document also provides a platform for the development of a strategic action plan.

To guide the responsible growth of priority sectors, this national policy puts forward a vision for "***Mauritius to be positioned as a prominent force in blue economy activities within the Western Indian Ocean region, setting a global example towards a resilient future***". Goals include sustainably expanding fisheries production, promoting advanced and inclusive mariculture, fostering innovation, building coastal climate adaptation capabilities, enhancing port infrastructure and shipping, growing ocean-based tourism, planning coastal development while conserving habitats, and sustainably tapping ocean renewable energy sources. Dedicated strategies also focus on Mauritius's outlying islands like Rodrigues.

Successful implementation rests on securing adequate financing, monitoring effectiveness, fostering private sector partnerships, extensive capability building and community participation. If pursued holistically, the blue economy policy aims to generate inclusive socio-economic progress and improved livelihoods while safeguarding marine and coastal ecosystems for future generations. The policy underscores commitments to transparency, evidence-based management, and regional cooperation to cement Mauritius' position as an anchor for sustainable development across the Western Indian Ocean

Background

Mauritius, officially known as the Republic of Mauritius, is in the southwest Indian Ocean and comprises several islands, including mainland Mauritius, Rodrigues, Agaléga, St Brandon, the Chagos Archipelago, and Tromelin (Issur, 2020). It has a land area of 1 979 km² and boasts an Exclusive Economic Zone (EEZ) of 2.3 million km² which is the fifth largest EEZ in the world (Statistics Mauritius, 2023). Mauritius also shares management responsibilities for an extended continental shelf area of 396 000 square kilometres with the Republic of Seychelles (Ministry of Foreign Affairs, Regional Integration and Foreign Trade, 2019) (Figure 1).

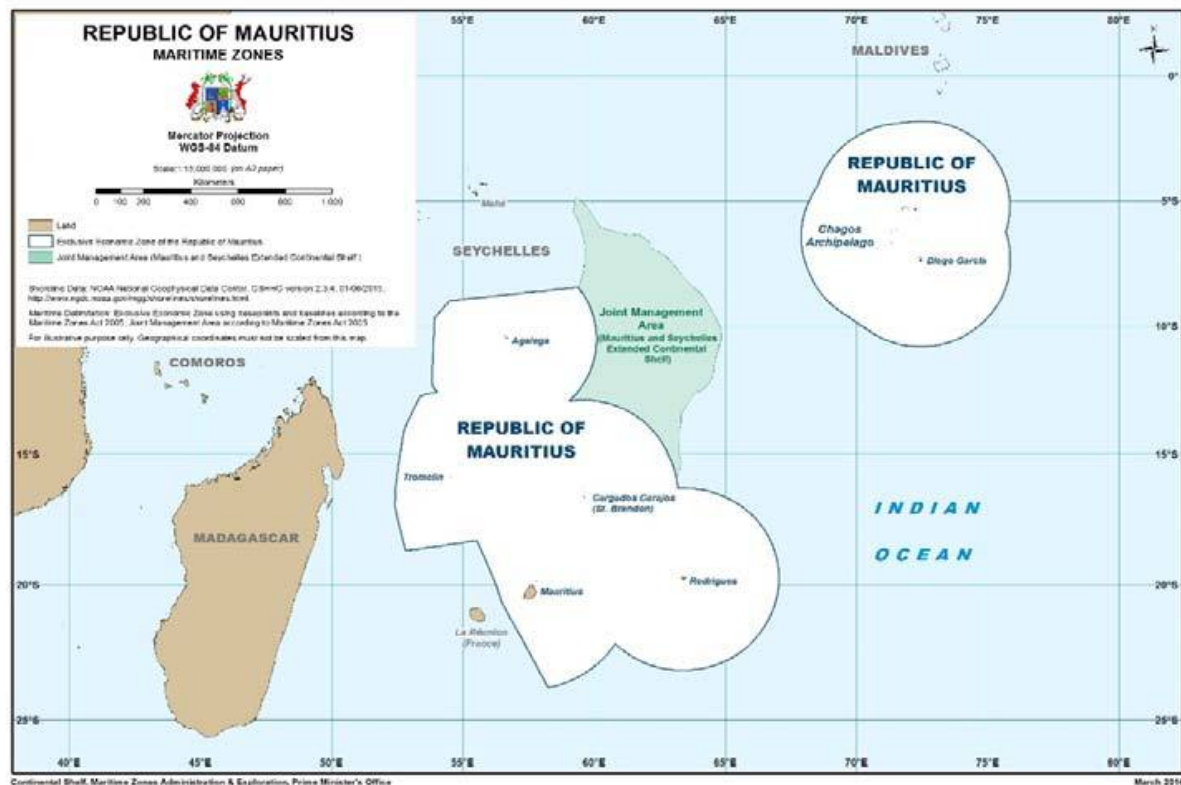


Figure 1: The Exclusive Economic Zone of Mauritius and its Extended Continental Shelf which is co-managed with the Republic of Seychelles.

(Image courtesy: Department for Continental Shelf, Maritime Zones Administration & Exploration, Prime Minister's Office)

Over the past fifty years, Mauritius' economy has transitioned from one focussed on sugar cane to one centred around an export-processing zone (EPZ), tourism, financial services, and a thriving information, communication, and technology (ICT) sector. The creation of EPZs has facilitated the development of a manufacturing sector with global reach (Tsakok, 2021). Simultaneously, the tourism industry has flourished, leveraging the country's natural beauty and cultural heritage to attract international visitors and drive economic growth (Dookhee, 2022). Mauritius has strategically positioned itself as a financial hub, fostering offshore banking and financial services, thereby bolstering its economic foundations. Furthermore, investments in the ICT sector have propelled technological innovation, generated employment, and enhanced the nation's technological capabilities (Tsakok, 2021).

In 2021, Mauritius was classified as an upper-middle-income country. It had achieved high-income country status in July 2020 (based on 2019 data), however, the impact of the COVID-19 pandemic led to a setback in economic progress. Despite effectively managing the pandemic, the gross domestic product (GDP) growth rate declined by 14.6 percent in 2020 (**Error! Reference source not found.**). Subsequently, in 2022, GDP growth rate increased to an estimated 8.3 percent, driven by a strong recovery in the tourism sector despite challenges posed by the COVID-19 Omicron variant wave and the war in Ukraine. The GDP growth rate is expected to moderate to 4.7 percent in 2023, influenced by the slowdown in global demand for goods and services. However, over the medium term, it is expected to converge back to its long-term trend (World Bank, 2023).

Table 1: Selected Economic Indicators for Mauritius

(GDP = Gross Domestic Product; Rs.bn = Billion Rupees; Rs.mn = Million Rupees; Rs.000 = Thousand Rupees; GFCF = Gross Fixed Capital Formation (¹Digest of National Accounts - Statistics Mauritius; ²World Bank Indicators)

| Economic Indicators | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| GDP at current market prices (Rs.bn) ¹ | 472.9 | 500 | 512.1 | 448.6 | 478.6 | 562.7 |
| GDP Growth Rate (over previous year) (%) ¹ | +3.9 | +4 | +2.9 | -14.6 | +3.5 | +7.8 |
| Ratio of GFCF to GDP at current market prices (%) ¹ | 16.8 | 18 | 19.1 | 17.1 | 19.6 | 19.7 |
| Total Population ¹ | 1 264 613 | 1 265 303 | 1 265 711 | 1 265 740 | 1 266 060 | 1 262 249 |
| Rate of inflation (%) ¹ | 3.7 | 3.2 | 0.5 | 2.5 | 4 | 10.8 |
| Unemployment Rate - Total (%) ¹ | 7.1 | 6.9 | 6.7 | 9.2 | 9.1 | n/a |
| GDP Per Capita at current market prices (Rs.000) ¹ | 373.1 | 414.3 | 424.6 | 371.1 | 377 | 439.7 |
| Annual GDP per capita growth (%) ² | +3.9 | +4 | +2.9 | -14.6 | +3.4 | +9 |
| Tourist arrivals ¹ | 1 341 860 | 1 399 408 | 1 383 488 | 308 98 | 179 78 | 997 29 |
| Gross tourism earnings (Rs.mn) ¹ | 60.3 | 64.0 | 63.1 | 17.7 | 15.3 | n/a |
| Openness of the economy (%) | 97.6 | 94.8 | 96.5 | 85.9 | 98.2 | 119.3 |
| Public Sector Debt as a % of GDP | 63.5 | 64.9 | 65.5 | 84.2 | 87.8 | 83.4 |

Rodrigues Island

Rodrigues Island, which is part of the Republic of Mauritius, has a land area of 108 km² and is surrounded by an extensive shallow lagoon covering an area of 230 km² (Rees et al., 2005). The island is roughly 18 km long and 8 km wide and has a maximum elevation of 400m above sea level at Mont Limon. It has a total coastline length of 94 km, and the shallow lagoon (less than 3m depth) has 18 islets (McDougall et al., 1965).

Rodrigues emerges from a 1 650 km² elongated shelf that gently slopes downward from the island towards the 100 m bathymetric contour and then falls off rapidly to a depth of over 2 000 m (McDougall et al., 1965). Rodrigues has nearly continuous fringing reefs bounding an extensive lagoon with deep channels and few patch reefs. It has 230.6 km² of reef habitat, of which 47.8 percent (110.2 km²) is sand, 28.1 percent (64.9 km²) is seagrass with the remainder consisting of macro-algae, limestone platform, reef flat and lagoon channel. (Turner and Klaus R, 2005).

In 2022, the population of Rodrigues was 43 650 (21 330 males and 22 320 females) (Statistics Mauritius, 2023) with a population density of 407 persons per km². The economy of Rodrigues relies heavily on tourism, agriculture, and fishing. The fisheries sector is crucial to the island's economy, with the main marine exports being salted fish and dried octopus destined for Mauritius (Statistics Mauritius, 2022)

Table 2: Fisheries Statistics, 2013 - 2022

(Source: Digest of Statistics on Rodrigues, 2022)

| Production (tonnes) | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------|------|------|------|------|------|------|------|------|------|------|
| (i) Lagoon | | | | | | | | | | |
| (a) Octopus | 561 | 503 | 504 | 603 | 630 | 605 | 616 | 607 | 626 | 609 |
| (b) Other fish | 1751 | 1158 | 1347 | 1257 | 1357 | 1250 | 1295 | 1244 | 1341 | 1386 |
| (ii) Off lagoon | 293 | 364 | 408 | 420 | 440 | 425 | 432 | 427 | 453 | 467 |

Select socio-economic indicators for Rodrigues are shown in Table 4. It is important that Rodrigues be considered separately when developing the Blue Economy as the island is in a very different position to Mauritius in terms of development and infrastructure. Priorities are therefore likely to be substantially different.

Table 3: Export of selected commodities (quantities) to the Island of Mauritius, 2013 – 2021

(Source: Digest of Statistics on Rodrigues, 2022)

| Commodity | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------|-------|-------|--------|-------|--------|-------|-------|-------|-------|
| Salted fish (kg) | 1 675 | 1 375 | 1 059 | 500 | 1 575 | 2 375 | 1 611 | 1 411 | 2 598 |
| Dry octopus (kg) | 5 100 | 6 600 | 5 625 | 3 025 | 5 875 | 6 360 | 4 564 | 4 250 | 7 475 |
| Frozen octopus (tonnes) | 142 | 185 | 210 | 114 | 135 | 233 | 179 | 250 | 351 |
| Frozen fish (kg) | 7 145 | 4 665 | 15 834 | 8 995 | 10 743 | 3 335 | 3 060 | 2 460 | 4 675 |

Table 4: Socio-Economic Indicators for Rodrigues

(Source: Digest of Statistics, Rodrigues 2022)

| Indicator | Value |
|---|--------|
| Population (2022) | 44 783 |
| Age distribution | |
| <i>0-14 years</i> | 29% |
| <i>15-65 years</i> | 63% |
| <i>65+ years</i> | 8% |
| Crude birth rate | 19.55 |
| General fertility rate | 74.90 |
| Life Expectancy at birth | 78.29 |
| Education | |
| <i>Enrolment in primary education</i> | 4 755 |
| <i>Enrolment in secondary education</i> | 5 169 |
| <i>Number of primary schools</i> | 17 |
| <i>Number of secondary schools</i> | 8 |
| Number of hospitals | 1 |
| Number of health centres | 2 |
| Tourist arrivals | 83 619 |

1. Introduction to the Blue Economy

The “Green Economy” was first conceptualised in 1989 (Pearce et al., 1989). Broadly, the Green Economy is founded on the principle that economic activities should be conducted in a way that minimises negative environmental impacts, conserves natural resources, and promotes long-term sustainability with a view towards eradicating poverty, sustaining economic growth, enhancing social inclusion, improving human welfare, and creating opportunities for employment and decent work for all (Merino-Saum et al., 2020).

Subsequently, various countries and international organisations developed policies and initiatives aimed at transitioning to a Green Economy to address environmental challenges and promote sustainable development. At the United Nations Conference on Sustainable Development (Rio+20) in 2012, however, many coastal nations questioned whether the focus on the Green Economy was applicable to them and stressed the need to shift towards a “Blue Economy” approach to better suit their circumstances, constraints, and challenges (UNECA, 2014). As a result, institutional efforts were made to incorporate a “Blue” aspect into the Green Economy, as embodied in the “Green Economy in a Blue World” report (UNEP, 2012). Simply put, the Blue Economy advocates for the same desired outcome as the Green economy namely: “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (UNEP, 2012).

At the core of the Blue Economy is the decoupling of socioeconomic development from environmental degradation. To achieve this, the Blue Economy approach is founded upon the assessment and incorporation of the real value of the natural (blue) capital into all aspects of economic activity. Efficiency and optimisation of resource use are paramount whilst respecting environmental and ecological parameters. The blue economy approach recognizes the role played by each sector and the potential to develop this sector further in the future. The blue economy focuses on areas such as: fishing; shipping and maritime transport; coastal tourism; marine energy (fossil and renewable); pharmaceutical and cosmetic industries; genetic resources and general sea-based products; and blue carbon trading opportunities (Mohanty et al., 2015).). The blue economy approach thus offers the prospect of sustained environmentally sound but also socially inclusive economic growth based on SIDS strengths in coastal and marine sectors. (UNECA, 2016).

Table 5: Taxonomy of Blue Economy Sectors and Activities*(Source: Mohanty et al., 2015)*

| Sector | Activity |
|--|---|
| Fishing | Capture fisheries, aquaculture, seafood processing |
| Marine Biotechnology | Pharmaceuticals, chemicals, seaweed harvesting, seaweed products, marine derived bio-products |
| Minerals | Oil and gas, deep-sea mining (exploration of rare earth metals, hydrocarbon |
| Marine Renewable Energy | Offshore wind energy production, wave energy production, tidal energy production |
| Marine manufacturing | Boat manufacturing, sail making, net manufacturing, boat and ship repair, marine instrumentation, aquaculture technology, water construction, marine industrial engineering |
| Shipping, Port & Maritime Logistics | Ship building and repairing, ship owners and operators, shipping agents and brokers, ship management, liner and port agents, port companies, ship suppliers, container shipping services, stevedores, roll-on roll-off operators, custom clearance, freight forwarders, safety, and training |
| Marine Tourism & Leisure | Sea angling from boats, sea angling from the shore, sailing at sea, boating at sea, water skiing, jet skiing, surfing, sailboarding, sea kayaking, scuba diving, swimming in the sea, bird watching in coastal areas, whale/dolphin watching, visiting coastal natural reserves, trips to the beach, seaside, and islands |
| Marine Construction | Marine construction and engineering |
| Marine Commerce | Marine financial services, marine legal services, marine insurance, ship finance & related services, charterers, media & publishing |
| Marine ICT | Marine engineering consultancy, meteorological consultancy, environmental consultancy, hydro-survey consultancy, project management consultancy, ICT solutions, geo-informatics services, yacht design, submarine telecom |
| Education and research | Education and training, R&D |

Table 7 describes key statistics that are frequently compiled and used to assess the changes operating in the blue economy.

The contribution of different Blue Economy sectors to the Mauritian economy in terms of the value added is shown in Table 6 below. All sectors experienced an increase in value added since 2018. The Seafood fishing and processing and port related activities are the two sub-sectors where there was the most significant increase.

Table 6: Value added (Rs Mn) for sectors identified as forming part of the Ocean Economy, 2018 – 2022

(Source: Statistics Mauritius, 2023).

| Sectors | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|--------|--------|--------|--------|--------|
| Mining and Quarrying | 2 | 2 | 2 | 2 | 1 |
| Seafood fishing and processing | 6 174 | 5 619 | 5 693 | 6 111 | 7 377 |
| Port-related activities | 10 337 | 10 629 | 9 190 | 9 682 | 11 032 |
| Tourism and related activities | 29 493 | 28 937 | 12 739 | 12 158 | 29 628 |
| Government bodies related to Ocean Economy | 965 | 1 026 | 1 049 | 1 084 | 1 096 |
| Value Added (Rs Mn) | 46 971 | 46 212 | 28 673 | 29 038 | 49 135 |

(Note: Port-related activities includes Sea Transport, Services allied to transport, Ship building and maintenance, Storage; Tourism and related activities includes Freeport activities, Hotels and restaurants, Leisure boat activities, Ship store and bunkering).

Table 7: Major Statistics on Blue Economy (2010-2022) (Digest of Agriculture, 2022 & Mauritius Ports Authority Statistical Bulletin, 2022)

| | 2010 | 2012 | 2014 | 2016 | 2018 | 2020 | 2021 | 2022 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| High seas (fish caught for the canning industry)-(tonnes) | 3,214 | 2,383 | 10,214 | 13,877 | 25,319 | 22,000 | 25,335 | 30,261 |
| Coastal fishing (tonnes) | 2,112 | 1,888 | 1,649 | 1,804 | 1,745 | 1,133 | 1,140 | 1,442 |
| Freshwater and Marine Aquaculture (tonnes) | 561 | 509 | 774 | 1,017 | 2,052 | 3,282 | 2,294 | 1,523 |
| Artisanal fishing (tonnes) | 1154 | 705 | 459 | 614 | 843 | 606 | 655 | 892 |
| Cargo Traffic (tonnes) | 6,299,677 | 6,477,220 | 6,896,149 | 7,273,377 | 8,064,953 | 7,421,764 | 7,602,869 | 7,640,827 |
| Container Traffic (TEUs) | 332,662 | 350,624 | 4 03,001 | 388,514 | 451,446 | 438,078 | 436,398 | 407,825 |
| Vessel Traffic | 2,172 | 3,476 | 3,329 | 2,934 | 3,379 | 2,776 | 2,550 | 2,657 |
| Tourists Arrivals (n) | 934,827 | 965,441 | 1,038,334 | 1,275,227 | 1,399,408 | 308,980 | 179,780 | 997,290 |

2. Past Initiatives to develop the Blue Economy in Mauritius

As a SIDS, Mauritius relies heavily on its coastal and marine resources. Earlier efforts to develop the Blue Economy focussed primarily on the fishing and tourism sectors. Several critical milestones can be noted as shown Figure 2 and described below.

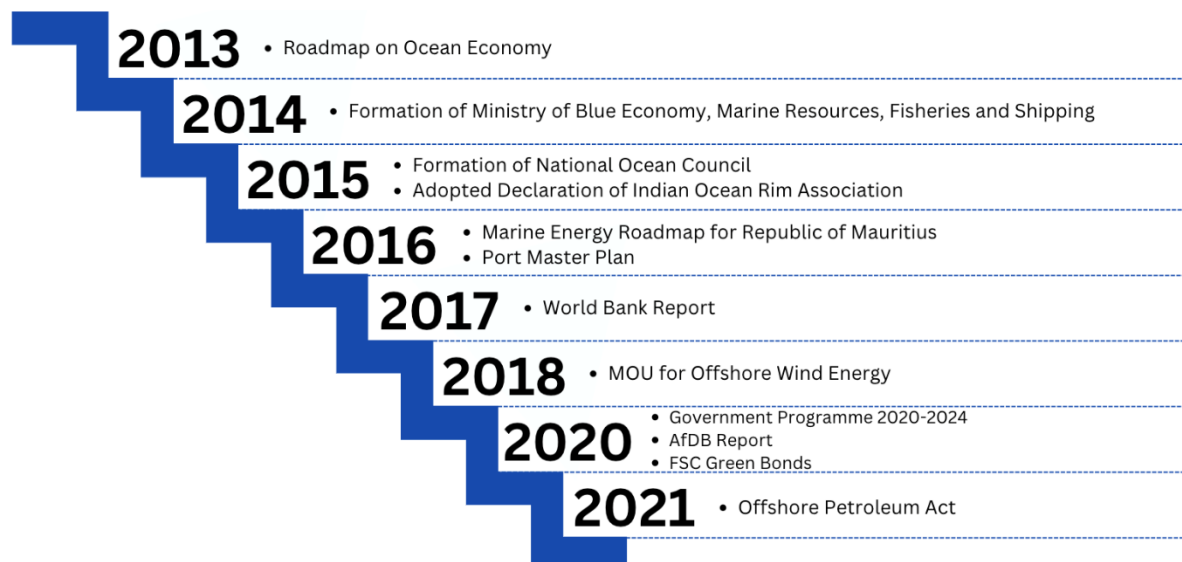


Figure 2: Past initiatives in the development of the Blue Economy in Mauritius

In 2013, Mauritius embarked on a dedicated journey to foster the growth of its Blue Economy with the development of a Roadmap on the Ocean Economy (Prime Minister’s Office, 2013).

A dedicated ministry, the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (MBEMRFS), was created in December 2014. The Ministry’s strategic objectives include the sustainable use of marine resources, developing local capacity in the blue economy (which includes increasing national capacity in sustainable fishing and the processing of seafood); the improvement of ocean hazards management to enhance climate resilience; and enhancing efficiency as a Maritime Safety Administration (Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, 2023).

In 2015, a National Ocean Council (NOC) was established to drive the Blue Economy in line with the Government Programme 2015-2019 (Cervigni and Scandizzo, 2017).

In 2015, Mauritius adopted the declaration of the Indian Ocean Rim Association on enhancing Blue Economy Cooperation for Sustainable Development in the Indian Ocean Region (IORA, 2015). One of the pillars of the Blue Economy as shown in the declaration document is Offshore Hydrocarbons and Seabed Minerals to foster new business opportunities and attract investment in the Indian Ocean.

A ‘Marine Energy Roadmap for the Republic of Mauritius’ was prepared by the International Renewable Energy Agency (IRENA) and published in April 2015.

In 2017, the World Bank published their report entitled “The Ocean Economy in Mauritius Making it happen, making it last” (Cervigni and Scandizzio, 2017). The aim of the report was (i) to assess the overall potential of the Ocean Economy to contribute to Mauritius’

development, (ii) to identify key sectoral and cross-cutting challenges to be overcome to seize that potential; and (iii) to evaluate ways to ensure the ocean economy's longer-term sustainability, addressing in environmental and climate change concerns.

In July 2016, Dutch engineering firm Royal Haskoning DHV prepared the Port Master Plan, which guides the infrastructural development in the port sector. The Mauritius Ports Authority (MPA) has also embarked on the implementation of the Green Port Concept to reduce the negative impacts of port activities on the environment.

The Government Budget 2018-2019 announced that the EDB would operate a Foreign Manpower Scheme to attract foreign talents in emerging sectors such as marine biotechnology. The Government Programme 2020-2024 proposes to develop a Marine Biotechnology hub. A series of measures were also announced to boost the bunkering sector: (i) a four-year tax holiday on income derived from bunkering of low Sulphur heavy fuel oil; (ii) refurbishment of storage facilities to cater for low Sulphur heavy fuel oil; and (iii) allowing ship-to-ship bunkering (EDB, 2023,2).

In 2018, the Ministry of Energy and Public Utilities (MEPU) and the Ministry for the Environment, Land and Sea of the Italian Republic signed a Memorandum of Understanding (MoU) for Offshore Wind Energy and on cooperation in the field of climate change vulnerability, risk assessment, adaptation, and mitigation.

The Three-Year Strategic Plan 2018/19-2020-21 laid emphasis on: compliance of shipping vessels with national and international maritime standards and capacity building for trained personnel in the maritime sector; coral farming for rehabilitation of degraded coral reefs.

In September 2020, the African Development Bank (AfDB) released its report on Mauritius entitled: "Blue Economy Policy, Implementation Assessment and Action Plan for Acceleration" (Sultan & Munyaradzi, 2020). According to the AfDB, The Blue Economy has a potential to contribute to the development of Mauritius, by ensuring the sustainable and equitable use of its resources with adequate consideration for climate adaptation measures. The Blue Economy Action Plan has as a main objective to accelerate the sustainable use of ocean resources in Mauritius to create employment and generate inclusive wealth for a better standard of living for all Mauritians for the next 10 years. The report adopts a two-tier approach to formulate the Action Plan. The first tier involves a situational analysis together with a review of programmes and policies of the Government in each Blue Economy sector and industry, with the aim to determine the landscape, identify gaps and highlight key challenges. The second tier builds the Action Plan with a set of programmes and activities, using internationally recognised sustainable frameworks. The Action Plan also aligns its recommendations with the development priorities of Mauritius (as defined by Government Programmes, Plans and Budgets), the Sustainable Development Goals (SDGs) and the Agenda 2063 goals.

In December 2021, the Offshore Petroleum Act (Act No. 19 of 2021) was promulgated. The object of the Act is to have an appropriate regulatory regime for the conduct of petroleum activities in the seabed and subsoil areas of the maritime zones of Mauritius, such as the prospecting, exploration, retention, and production of petroleum. The Department for Continental Shelf, Maritime Zones Administration and Exploration of the Prime Minister's

Office is the regulatory body for petroleum activities in the maritime zones of Mauritius and (a) regulates, monitors and oversees all petroleum activities, (b) is responsible for the issue of prospecting permits, exploration licences, retention licences and production licences, (c) negotiates, on behalf of the Government, prospecting agreements and petroleum agreements, (d) facilitates the conduct of petroleum activities, (e) develops strategies and policies to minimise and manage the impacts of petroleum activities in the marine environment.

In the 2020/2021 budget, the Mauritius Minister of Finance, Economic Planning and Development announced that the Bank of Mauritius (BOM) would come up with a framework for blue and green bonds and a technical committee was set up to work on the development of the domestic sustainable bonds market in Mauritius. The new FSC guidelines for the 'Issue of Corporate and Green Bonds in Mauritius' are intended to serve as a supplement to the BOM guide in assisting potential issuers to understand the legal and regulatory requirements for the issue of corporate and sustainable bonds and the listing of these bonds on exchanges licensed in Mauritius. It is to be noted that a subset of green bonds, known as 'blue bonds', are designed to support sustainable marine and fisheries projects.

The overall policy guidance for the Blue Economy emanates from the Government 2020-2024 programme. In its 5-year programme, the Government announced that it would promote more extensively the use of clean and renewable energy (RE) including marine renewable energy and would continue to encourage carbon-free energy generation by accelerating the development of renewable energy to reach 35 percent in 2025 and 40 in 2030. It would also promote research on new renewable energy technologies and would introduce fiscal incentives and budgetary measures to ensure achievement of these targets. The Government Programme also set an objective to transform the Port Louis Harbour into a major transport logistics and maritime hub connecting Europe, Africa and Asia and it would act upon the recommendations of the Port Master Plan. The programme emphasised the need to protect the oceans, marine resources, and beaches. The Government aimed at the restoration of beaches through a national integrated management plan and the underwater fauna and flora of the lagoons through the planting of coral and cultivation of algae.

3. Review of Existing Studies

Several recent studies and reports have analysed different aspects of the Blue Economy for the Mauritian Economy.

The World Bank (2017) study estimated that doubling the GDP share of the Blue Economy (the "O2" strategy) was possible; but achieving such a target was likely to take at least 15 years. It was also noted that attempts to pursue the O2 target over a shorter period could result in undesirable economic outcomes, such as diseconomies of scale, price increases, excessive use of natural resources, and fiscal imbalances. The World Bank (2017) study concluded that, with investments in the order of US\$580 million per year over "the next ten years", the O2 strategy could yield considerable growth results, including an increase in the Blue Economy GDP of 62 percent in absolute terms and 38 percent in terms of its share of the national total (rising from 12.6 percent to 17.5 percent). Such an extra investment push would be large, being equivalent, on average, to an additional 1.6 percent of GDP (compared with the last 10 years' average of investment as a share of GDP). While large, such an increase is

not inconceivable, since it would mean lifting total investment back to the levels observed in the early 2000s. Full achievement of the O2 target in the longer term was estimated to require investments of around US\$8.2 billion and, in parallel, would require a reduction in over-exploitation and environmental stresses in the lagoons and coastal fisheries; careful management in the development of underused resources such as the Banks fisheries; and an enhanced investment climate for expansion of aquaculture and the seafood hub.

The African Development Bank prepared a document in 2020 that provided strategic directions as well as a roadmap for the Blue Economy (Sultan and Munyaradzi, 2020). Action plans were proposed for several clusters namely Harvesting of Living Resources; Extraction of Non-Living Resources; Use of Renewable Non-Exhaustive Natural forces; Commerce of Trade in and around the Ocean; Response to Ocean Health Challenges; The Bank also outlined financing issues as well as potential sources of funding.

Morrissey et al (2019) used a Social Accounting Matrix framework to examine the distributional effects of investment in the port sector on employees and households in Mauritius. Two investment scenarios (conservative, US\$1089 million and optimistic, US\$1332 million) were considered. The results suggested that in the short term, investment in the development of the port sector would have an overall positive impact on the Mauritian economy. Poor and lower middle-income households would receive a very small positive impact, as would employees with lower education levels. However, in the medium to long term, impacts at the household level would be uneven with wealthy households and employees with university education receiving the greatest benefit. These results suggest the need for complementary redistributive policies.

Other studies with a regional dimension have also highlighted opportunities for Mauritius. For instance, Benzaken (2016) undertook an analysis of the match between technology-specific requirements for ocean energy technologies (wave power, ocean thermal energy conversion/OTEC, tidal barrages, tidal current turbines, and ocean current power) and the physical resources in 13 WIO regions—Kenya; the Seychelles; Northern Tanzania and Zanzibar; Southern Tanzania; Comoros and Mayotte; Northern, Central, and Southern Mozambique; Western, Eastern, and Southern Madagascar; Réunion; and Mauritius. The study showed potential for wave power over vast coastal stretches in southern parts of the WIO, and high potential for OTEC at specific locations in Mozambique, Comoros, Réunion, and Mauritius. The potential for tidal power and ocean current power is more restricted but may be of interest in some locations.

Building on these earlier analyses to inform future policies and investments will help position Mauritius to maximise the ocean economy's growth and contribution to equitable and sustainable development objectives.

4. Rationale

Despite the formation of various councils and working groups, as well as the formulation of different roadmaps and action plans, Mauritius' vision of a Blue Economy has not been fully realised. In recognition of the need to stimulate the Blue Economy, the United Nations Food and Agriculture Organisation (FAO), in collaboration with the Mauritian Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (MBEMRFS), has developed this policy

paper. In line with the recommendations of the World Bank (Cervigni and Scandizzo, 2017), the aim of the policy paper is to provide a series of policy statements with several key actions for accelerating the growth of the Blue Economy in Mauritius and Rodrigues.

In the following section, we provide a concise overview of the institutional environment relevant to the Blue Economy and the status of the existing and emerging Blue Economy sectors in Mauritius, highlighting challenges and opportunities to inform the identification of strategic actions.

5. Institutional & Stakeholder Mapping

5.1. Governance

5.1.1. The Ministry of Blue Economy, Marine Resources, Fisheries and Shipping

The Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (MBEMRFS) is the apex institution in Mauritius charged with developing the Blue Economy as an economic pillar of the country. The vision of the MBEMRFS is to make the ‘Ocean Industry an important pillar in order to sustain economic diversification, job creation and wealth generation’ through fully optimising in a sustainable manner the immense potential of the EEZ. Its specific target in this regard is to double the contribution of the Blue Economy to GDP by 2025.

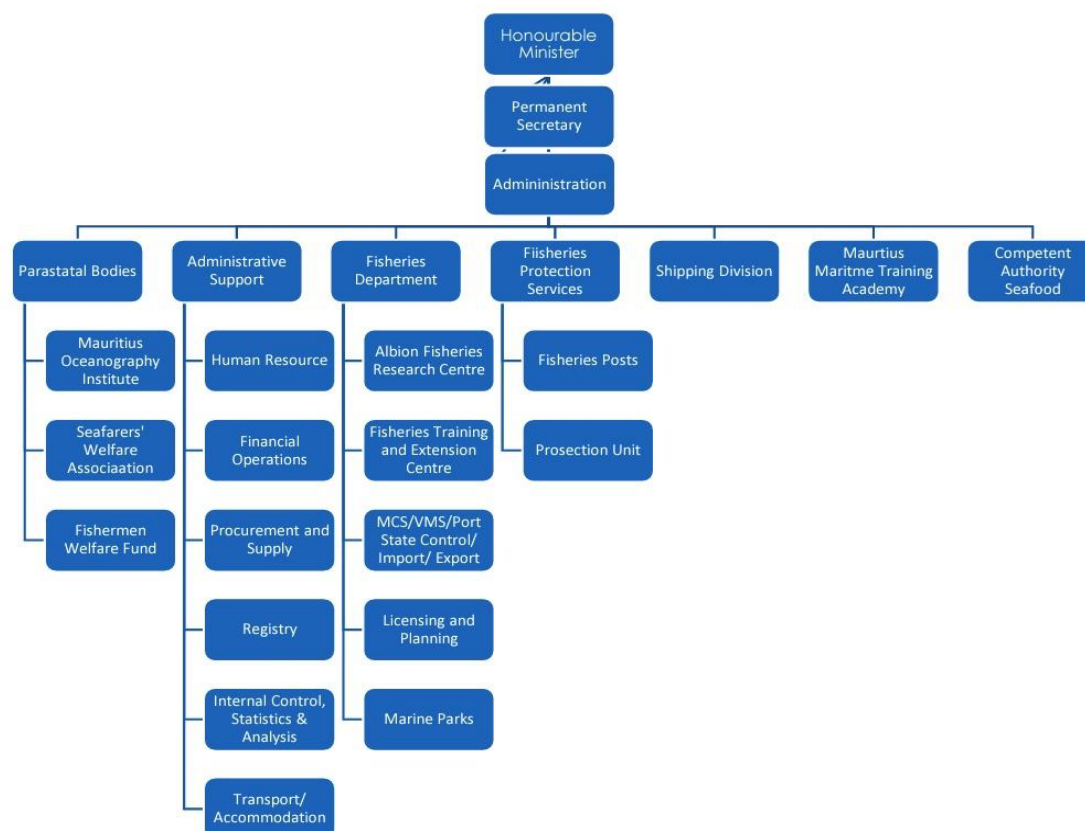


Figure 3: Organogram of the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping.

The MBEMRFS comprises seven distinct divisions (see Figure 3) (Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, 2020) which are described in more detail below.

5.1.1.1. Administrative Support

This division is responsible for human resources, financial operations, procurement and supply, registry, internal control, statistics and analysis, and transport and accommodation.

5.1.1.2. Parastatal Bodies

Parastatal bodies include the Mauritius Oceanography Institute (MOI), the Seafarers' Welfare Fund (SWF), and the Fishermen Welfare Fund (FWF).

Mauritius Oceanography Institute

The Mauritius Oceanographic Institute (MOI) was established in January 2000 by the proclamation of the MOI Act (Act No. 24 of 1999). The MOI was established to rationalise and co-ordinate research and development activities related to oceanography. The MOI also advises the Government on the formulation and implementation of policies and programmes in respect to oceanography. An important achievement of the MOI was to provide technical support to the Prime Minister's Office for the formulation of a Joint Submission with Seychelles to the UN Commission on the Limits of the Continental Shelf for an extension of the Continental Shelf of the Republic of Mauritius in the region of the Mascarene Plateau in 2008. This secured an additional seabed area of about 400,000 km square kilometres which is now jointly managed with the Seychelles.

Seafarers' Welfare Fund

The Seafarers' Welfare Fund (SWF) Act 2008 was enacted to promote the social and economic well-being of seafarers in Mauritius. Its establishment involved assuming responsibility for managing the assets and fulfilling the obligations of the previously established Seafarers' Welfare Fund under the Merchant Shipping (Seafarer's Welfare Fund) Regulations 2002. The SWF Act 2008 was put into effect to ensure the effective administration of the fund and the provision of welfare services to support seafarers in Mauritius.

The objectives of the SWF, as per the SWF Act 2008, include:

- promotion of the social and economic welfare of seafarers in Mauritius, irrespective of the nationality of the seafarer and irrespective of the state in which the ship on which he is employed is registered;
- development of schemes and projects for the welfare of seafarers and their families; and
- taking over and managing the assets and discharge the liabilities of the Seafarers' Welfare Fund established under the Merchant Shipping (Seafarers' Welfare Fund) Regulations 2002.

The Fishermen Welfare Fund

The Fishermen Welfare Fund (FWF) is a Corporate Body operating under the aegis of the MBEMRFS. It was created by the Fishermen Welfare Fund Act No. 28 of 2000. It is managed

by a Board of 10 members including a chairperson and four members from fisher associations, including a representative from Rodrigues. The Fund exists to promote the betterment of registered fishers and their families of both Mauritius and Rodrigues. It promotes a high quality and cost-effective service to fishing communities.

[The Fishermen Investment Trust](#)

The Fishermen Investment Trust (FIT) is a corporate body established under the Fishermen Investment Trust Act 2006. The FIT operates under the aegis of the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping. The FIT constantly aims at democratising access to the fishery resources of Mauritius and giving due consideration to the fishing community. The Trust targets amongst others, artisanal fishermen and bank fishermen. The purpose of the FIT is to invest directly or through a body controlled by it in fishing and other related activities. The FIT aims at developing projects and schemes for the empowerment and welfare of fishers. The FIT also encourages and aids investors to set up business in Mauritius either as a private concern or in partnership with the FIT. All technical facilities are provided by the Albion Fisheries Research Centre through the FIT. FIT's mission is to accompany the Fishermen community to a better future through viable and sustainable initiatives and to contribute to their social upliftment. FIT's vision is to be a key player in the fishing industry while empowering the fishermen community to be a partner in the socio-economic development of the country. The Trust is managed by a Board of Directors which includes three representatives of fishermen.

5.1.1.3. Fisheries Division

The Fisheries Division is the technical arm of the Ministry and is headed by the Acting Director of Fisheries. The latter oversees the different divisions within the Fisheries Division as detailed hereunder. The Fisheries Division is responsible for the development of the fisheries sector, the training of fishers, the provision of fishing licences, monitoring and combating Illegal, Unregulated and Unreported (IUU) fishing, and the regulation of import and export of fish and fish products.

The Fisheries Division comprises eight sub-divisions, namely the Aquaculture Division, Marine Resources Division, Marine Science Division, Marine Conservation Division and Laboratories Division based at the Albion Fisheries Research Centre (AFRC), Fisheries Training and Extension Centre, Planning and Licensing Division based at the Head Office, MCS/VMS/Port State Control and Import & Export Division based at the Seafood Hub.

[The Albion Fisheries Research Centre \(AFRC\)](#)

The AFRC was set up in 1982 with the assistance of the Government of Japan. It carries out applied research, development, and management activities through specific divisions, namely Aquaculture Division, Marine Resources Division, Marine Science Division, Marine Conservation Division and Laboratories Division.

The Aquaculture division is responsible for the promotion and development of aquaculture with a view to increase fish production through research on different marine and freshwater species. It is also involved in the dissemination of information on aquaculture and provision of technical advice and support to different stakeholders.

Marine Resources Division

This division is responsible for carrying out research, development, and management of the fishery resources in a sustainable manner for the benefit of all stakeholders. It is also responsible for development activities aimed at increasing knowledge on the fishery resources found in the EEZ with a view to enabling its sustainable utilisation. The Marine Resources Division deals with the Coastal Fishery, Pelagic Fishery and Offshore Demersal Fishery projects.

Marine Science Division

The Marine Science Division is responsible for the long-term protection and conservation of coastal marine ecosystems for ecosystem resilience and sustainable use of marine resources; sustainable development and management of coastal areas; and projects regarding mangroves propagation, seagrass mapping and blue carbon around the island, marine turtles' conservation, stranded marine mammals/turtles, climate change adaptation and scientific research.

Marine Conservation division

The Marine Conservation division is responsible for the long-term protection and conservation of marine biodiversity and habitats for sustainable use while maximising economic and social benefits derived from the coastal zone.

Laboratories Division

This division comprises three laboratories, namely: Marine Chemistry, Marine Microbiology and Fish Toxicity, and the Quality Control Unit. The division is committed to instil the highest standard of quality for the testing of seawater, the screening of fish for toxicity and dispensing associated services in view of monitoring, protecting, conserving marine resources, and safeguarding public health. The Marine Chemistry and Marine Microbiology Laboratories of the Division are accredited to MS ISO/IEC 17025:2017.

Fisheries Training and Extension Centre (FiTEC)

FiTEC caters for the various training needs of the fishing industry and carries out research and trial fishing for underutilised resources. FiTEC also designs, develops, sets, re-sets and maintains Fish Aggregating Devices (FADs) for the benefit of artisanal fishers to take pressure off the lagoon fishery and increase the supply of fresh fish on the market. FiTEC offers several training courses for fishers and fishmongers.

MCS/VMS/Port State Control and Import/Export Division

The MCS/VMS/Port State Control unit is responsible for the implementation of conservation and management measures to combat Illegal, Unreported and Unregulated (IUU) fishing, keep the port free of illegal fishing boats/vessels, ensure that only legally caught fish are traded, ensure a continuous supply of safe fish and fish products for local consumption, and monitor licensed fishing boats/vessels in the EEZ of Mauritius through the VMS.

The Import/Export Unit mainly controls the import and export of fish and fish products to ensure that good quality and wholesome fish and fish products are marketed in the country, that there are fair trade practices, that the products intended for import or export do not

originate from illegal sources and that imported fish and fish products conform to international requirements of the WTO, Codex Alimentarius and the EU.

[Planning and Licensing Division](#)

The Planning Unit is responsible for planning and implementation of fisheries policies as well as the compilation and processing of information in the fisheries sector. Its main activities include drafting and reviewing fishing agreements and Memorandum of Understanding (MoU) for cooperation in the fisheries sector, coordinating with the seafood processing sector and other stakeholders, and to follow-up actions on international fisheries negotiations.

The Licensing Unit is mainly responsible for processing and issuing fishing licences for local and foreign fishing vessels.

5.1.1.4. Fisheries Protection Service

The Fisheries Protection Service (FPS) is responsible for the enforcement of fisheries legislation and monitoring of fishing and fishing-related activities. The FPS operates 14 fisheries posts and oversees 61 fish landing stations around the island of Mauritius. The FPS also operates one fisheries post in Agaléga.

5.1.1.5. Shipping Division

The Shipping Division is responsible for maritime safety, security, and the prevention of pollution from ships. It ensures compliance with International Maritime Laws and Conventions and acts as the Maritime Administration responsible for ensuring that all vessels registered under the Mauritius Flag and all foreign vessels fishing in Mauritian territorial waters comply with international standards. To maintain the status of Mauritius on the IMO STCW "White List", the Shipping Division has implemented the provisions of the ISO 9001:2015 standard and transited to ISO 9001:2015 in March 2018.

5.1.1.6. Mauritius Maritime Training Academy (MMTA)

The Mauritius Maritime Training Academy (MMTA), previously known as the Sea Training School, is mandated to provide quality maritime training in line with international standards. Training courses are provided in accordance with the Merchant Shipping (Maritime Training Provider) Regulations 2018 and guidelines issued by the Shipping Division. The MMTA provides training to all categories of ratings for merchant and fishing vessels, and for personnel working in the catering/hospitality department of passenger/cruise vessels. Additionally, the MMTA provides officer courses, namely Skipper, Second Hand, Chief Engineer, and Second Engineer, for fishing vessels of 24 metres in length and over and fishing vessels with propulsion power up to 1500 KW. The MMTA is ISO Certified (ISO 900: 2015).

5.1.1.7. Competent Authority Seafood

The Competent Authority Seafood (CASF) is responsible for the inspection and certification of fish and fish products for export. Its activities are governed by Government Notice 147 of 2009 (Export of Fish and Fish Products Regulations), Government Notice 204 of 2010 (Export of Fish and Fish Products [Amendment] Regulations) and Government Notice 209 of 2012 (Export of Fish and Fish Products [Amendment] Regulations) under the Fisheries and Marine Resources Act 2007.

[5.1.2. External Stakeholders](#)

The Ministry's external stakeholders are diverse and include fisher communities (artisanal, semi-industrial, and aquaculture fishers), the fishing industry, ship owners, shipping agents, seafarers' welfare associations, maritime industry professionals, maritime training institutions, oceanography experts, coastal zone users, non-governmental organisations, the public sector, the private sector, researchers, students, international partners, lending institutions, and the public.

[Mauritius Ports Authority \(MPA\)](#)

The Mauritius Ports Authority (MPA) is the only national port authority set up under the Ports Act 1998. It regulates and controls the port sector in the Republic of Mauritius, including Rodrigues and all outer islands. The MPA provides the main port infrastructure and superstructure, together with related facilities. It also provides marine services and navigation aids, while it regulates and controls all port activities and environmental issues within the designated port areas. The strategic objective of the MPA is to equip, professionally manage and constantly upgrade ports in Port Louis and Port Mathurin (Rodrigues) to maintain high productivity and enhanced service levels at competitive rates.

[Economic Development Board \(EDB\)](#)

The Economic Development Board (EDB) is the national investment promotion agency of the Government of Mauritius with the mandate to promote and facilitate the implementation of investment projects and, more importantly, to continuously improve the investment and business climate investment in the country. It is the first point of contact for investors exploring business opportunities in Mauritius and assists investors in growing, nurturing, and diversifying their business. The Blue Economy is one of the pillars of the EDB (EDB, 2023-2).

[National Coast Guard \(NCG\)](#)

The National Coast Guard (NCG) is a specialised branch of the Mauritius Police Force under the Commissioner of Police. It was previously the marine wing of the police force when Mauritius naval ship Amar was acquired by Mauritius in 1974. As custodian of Mauritius' maritime assets, the NCG has the responsibility of safeguarding the EEZ of the Republic and of rendering assistance to all seafarers of the nation.

[Beach Authority \(BA\)](#)

The Beach Authority (BA), established under the Beach Authority Act No. 7 of 2002, is a body corporate operating under the aegis of the Ministry of Environment, Solid Waste Management and Climate Change. Its main objective is to ensure an integrated approach for the proper control and management of public beaches both in Mauritius and Rodrigues through the provision of appropriate infrastructure and facilities.

[Mauritius Shipping Corporation Limited \(MSCL\)](#)

The Mauritius Shipping Corporation Ltd (MSCL) was incorporated on the 10th of January 1986 as a private limited company and owns / operates the "Mauritius Trochetia". It is the national shipping line and ensures shipping connections among the island communities of the Republic of Mauritius and to allow the Government of Mauritius to fulfil its social obligations.

[Cargo Handling Corporation Limited \(CHCL\)](#)

The Cargo Handling Corporation Ltd (CHCL) is a state-owned private company incorporated in October 1983. The CHCL is the sole operator for container handling activities at Port Louis. It also handles general and bulk cargo excluding products through pipelines and provides ancillary services such as monitoring, leasing, and transfer of reefer containers. It has three distinct business units, namely: the Mauritius Container Terminal, the Multi-Purpose Terminal, and Corporate Services.

[Indian Ocean Tuna Commission \(IOTC\)](#)

The Indian Ocean Tuna Commission (IOTC) is an intergovernmental organisation responsible for the management of tuna and tuna-like species in the Indian Ocean. It promotes cooperation among its Contracting Parties (Members) and Cooperating Non-Contracting Parties to ensure the sustainable utilisation of fish stocks.

[Mauritius Renewable Energy Agency \(MARENA\)](#)

MARENA is responsible for the promotion of renewable energy. It oversees the transition to a sustainable lifestyle while ensuring that the country's energy demand is increasingly met by renewable energy. It is expected to support sectoral developments while keeping in mind international commitments.

6. Existing Blue Economy Sectors

6.1. Fisheries

Mauritius has an Exclusive Economic Zone (EEZ) rich in marine resources, including various species of fish and other seafood. The fisheries sector contributes some 1 percent to GDP and total catch in 2022 was about 33 226 tonnes, most of which came from high seas fisheries (91 percent) with smaller contributions from coastal fisheries (4.3 percent) and aquaculture (4.7 percent) (Statistics Mauritius, 2023). The country's fishing grounds support both artisanal and industrial fishing activities.

Industrial or commercial fishing is carried out mainly by European-flagged purse seiners and Asian-flagged longliners. The industrial longline fleet consisted of thirteen longliners in 2022. Mauritius also has a fleet of fishing vessels equipped for deep-sea fishing. The domestic industrial tuna fishery consists of four Mauritian-flagged purse seiners and 13 Mauritian-flagged longliners that operated in the IOTC area of competence. Tuna is a significant target species for industrial fishing, and the country exports tuna products to international markets. Total catch in Year 2022 was 3,384.8 tonnes consisting mainly of yellowfin tuna (47.8%), bigeye (27.2%), albacore (15.2%) and smaller volumes of swordfish (3.0%), marlins (1.7%) and sharks (0.7%). The remainder of the catch consisted of wahoo, skipjack tuna, oil fish, dolphin fish and other miscellaneous species.

The semi-industrial offshore banks fleet targets demersal line fish with an estimated 200 participating fishers. Activities vary seasonally and include fishing on shallow-water banks for emperor species (*Lethrinidae*), along deep-water drop offs and continental slopes for deepwater snapper, and occasional fishing for demersal invertebrates in the inshore shallow

waters of St. Brandon. In 2022, the semi-industrial total catch was 1,062 tonnes and comprised mostly of *Lethrinidae* (76%), Snappers (16%) and *Serranidae* (6%).

Artisanal or small-scale fishing is an important component of the fisheries sector. It involves traditional fishing methods and is often carried out by local communities. The artisanal fishery, a shore- and boat-based open access fishery, is the main supplier of fish to the domestic market. The boat-based component operates in two distinct fishing zones: the lagoon zone inside of the fringing reef of the islands of Mauritius and Rodrigues, and the off-lagoon zone on the outside of the fringing reef. Fishing vessels are typically wooden or fibreglass boats (6 to 7m in length) with outboard motors, oars, or sails (IOTC, 2019). In 2022, there were 1830 artisanal fishers. (Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, 2023). Lagoon fishers use metal harpoons or spears, wire hooks, basket traps, hook and line, cast nets, and gillnets and target a variety of finfish species and octopus. The lagoon fisheries are generally considered to be overfished. In addition to the artisanal fishery, 'gleaning' is also practised in the lagoons, primarily by women who harvest shellfish. Off-lagoon fishers operate up to 20 km offshore of the fringing reef and primarily target pelagic species around FADs and, to a lesser extent, sharks, and demersal species. No domestic catches of sea cucumber species have been reported since the moratorium was put in place in 2010 because of overfishing (IOTC, 2021).

The sport/recreational fishery is primarily concentrated around Mauritius Island with a few operators on Rodrigues (Pepperell et al., 2017). In 2022, around 60 sports/recreational fishing boats were involved in this fishery. (Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, 2023). The sport/recreational fleet predominantly targets large pelagic species (marlin, sailfish, and tuna) using trolling gear and, to a lesser extent, demersal and semi-demersal species using baited hooks and artificial lures. Mauritius hosts several annual big game fishing competitions and is renowned for the quality of its big game fishing, particularly for marlin (Pepperell et al., 2017). St Brandon also supports a high-value recreational fishery for bonefish, trevally, and pompano.

Challenges

Several key constraints limit the growth and sustainable management of Mauritius' fisheries:

- Limited funding
- Lack of marketing and distribution channels
- Limited and expensive storage infrastructure
- Limitations in the port and cargo handling sector
- Unequal distribution of rewards across the fish supply chain
- Low interest among artisanal fishers in shifting to alternate stocks/high seas fishing
- Most targeted stocks are maximally exploited
- Habitat degradation from fishing and non-fishing activities
- Limited knowledge and awareness at fisher level of the status of the resource
- Limited catch from Mauritian vessels
- Quotas for tuna set by the IOTC in the fisheries sector
- Poor monitoring, control and surveillance (MCS) system
- IUU fishing

- Poor ICT infrastructure
- Inadequate and unconsolidated fisheries data and information
- Climate change

Opportunities

- Development of port sector to establish a regional hub for seafood and processing of high-value fish and fish-related products
- Establish new markets for fish products
- Investment into innovative technology and management practices to reduce bureaucratic and time-consuming procedures
- Lagoon rehabilitation and managing artisanal fishers to ensure fishers can generate liveable incomes to sustain their livelihoods
- Invest in processing and value-addition capacity for by-catch species, for export markets and domestic use
- Utilisation of the off-lagoon fisheries resources
- Development of the sport and recreational fishing sector

6.2. Aquaculture

The Mauritian government recognises two types of aquaculture: large-scale industrial farming and small-scale artisanal farming. Large-scale industrial mariculture is limited to one marine finfish cage culture operation, Ferme Marine de Mahebourg Ltd (FFM), in the Mahebourg Lagoon. The farm now only produces red drum but previously also produced limited quantities of Mediterranean seabass (*Dicentrarchus labrax*). In 2022, FFM produced 880 tonnes of red drum and a small quantity of seabass mainly for the local market. Around 90 percent of FMM's feed supply is imported from European companies BioMar and Skretting; the remainder is sourced locally from a Mauritian aqua-feeds producer, Livestock Feed Limited (LFL).

Smallholder mariculture activities include cage culture of rabbitfish (*Siganus sutor*) and goldlined seabream (*Rhabdosargus sarba*), mud crab fattening, and rack culture of hooded oysters (*Saccostrea cucullata*) in a semi-closed estuary. Most of these operations rely on wild-caught seed although the AFRC does produce small quantities of mud crab juveniles and seabream fingerlings and is undertaking sea cucumber farming trials.

Challenges

- Lack of proper institutional framework and enabling economic environment to attract private investment. A more enabling institutional environment is required, including more streamlined licence and lease applications and approval processes, and facilitating access to shore-based sites.
- Reluctance of financial institutions to fund aquaculture projects
- Lack of scientific expertise and technical capacity for aquaculture development
- Shortage of skilled human resources and support services
- Hatchery capacities to supply the government led aquaculture development

- Environmental damage and pollution events (especially in relation to lagoonal aquaculture)
- Weather related events including cyclones
- Competition for resources such as land, investment, and water. The high demand for coastal land limits potential for land-based, pump-ashore aquaculture systems.
- Rising electricity costs and a constrained national electricity supply.
- Poorly structured legal requirements, guidelines, and protocols limit expansion
- Lack of proper consultation between stakeholders (fishermen, coastal community, local NGOs, local marine biologists, and scientists) has led to resistance and conflict and subsequent negative influence on progress.

Opportunities

- Land-based RAS operations (mud crab and sea urchins); hatchery and grow out
- Sea cucumbers
- Hooded oysters
- Integrated Multi Trophic Aquaculture (IMTA)
- Development of Aquaculture Development Zones to limit legal constraints and promote private sector investment
- 21 lagoon and open ocean sites suitable for commercial-scale mariculture.
- Barachois identified as suitable for small-scale farming systems.
- Estimated product potential for marine finfish in Mauritius: 10,000 tonnes per annum.

6.3. Seafood Processing

The seafood industry in Mauritius encompasses a range of activities aimed at enhancing the value of fish products. This involves diverse operations such as fish transshipment, processing activities like sorting, grading, cleaning, filleting, and canning, as well as storage and warehousing.

Approximately 150 000 tons of fish cargo is managed at Port Louis annually, and there is capacity to increase this to 250 000 tons (Port Master Plan, 2016). The existing fishing infrastructure in Mauritius consists of four operational fishing quays. Among these, two are situated at Trou Fanfaron and fall under the administration of the Mauritius Ports Authority (MPA). The remaining quays are overseen by Froid des Mascareignes Ltée and Mauritius Freeport Development Co. Ltd (MFDC).

Challenges

- The Mauritian seafood industry faces a significant challenge related to sourcing sufficient raw material to meet processing needs.
- Enhancing the seafood sector's growth requires an increase in tuna supply, either through transshipment from other islands or increased production from Mauritian waters.
- Less than 10 percent of tuna landed in Port-Louis is caught in Mauritian waters, highlighting a need for increased domestic catch.
- Global sourcing introduces rules of origin concerns, particularly for accessing the European Union (EU) market.

- Maintaining market access to the EU is a significant concern for Mauritian processors.
- The retail/wholesale/secondary processing sector captures most benefits within the seafood industry's value chain.
- An examination of the seafood industry's value chain is essential to enhance equity and efficiency aspects.
- Developing processing capabilities for high value-added products and technical expertise remains a challenging endeavour.

Opportunities

- Potential for value-added products marketed at local and export markets
- Alternative products from development of aquaculture industry
- Processing and value-addition capacity for by-catch species, for export markets and domestic use

6.4. Tourism

Sustainable tourism development is essential for Mauritius, as it balances the needs of tourists with the country's environmental, social, and economic requirements. In 2021, travel and tourism contributed around 5 percent to Mauritius's Gross Domestic Product (GDP), a decrease from 19.5 percent in 2019, reflecting the ongoing impacts of the coronavirus (COVID-19) pandemic in the sector (Statista Research Department, 2022). Contribution of travel and tourism to GDP in Mauritius 2019-2021

Before Covid-19, Mauritius received around 1.2 million tourists per annum (period of 2010 to 2019) (Statistics Mauritius, 2023). In 2022, there were 997 290 tourist arrivals, predominantly from France (238 864), the United Kingdom (140 847), Germany (96 767), the Republic of South Africa (96 316), Reunion Island (73 336), India (36 956), Switzerland (28 350) and Italy (23 035). In December 2022, there were 110 licensed hotels of which one was temporarily closed and four were closed due to renovation works. The total room capacity of the 105 hotels in operation was 13 017 with 30 145 beds. During the year 2022, the room occupancy rate of all licensed hotels in operation averaged 62 percent compared to 21 percent in 2021; and the bed occupancy rate was 55 percent compared to 17 percent in 2021. At the end of December 2022, there were 56 'large' hotels (i.e. well-established beach hotels with more than 80 rooms) in operation. The total room capacity of these 56 'large' hotels was 10 326 with 24 408 bed places. These 'large' hotels represented 53 percent of all licensed hotels in operation but comprised 79 percent of total room capacity and 81 percent of total beds (Statistics Mauritius, 2023) (Figure 4).

Large hotel establishments and resort-style establishments are generally found in similar tourism hotspots in Mauritius' coastal zone, and these include:

- Balaclava, Grand Gaube and Grand Baie (North West)
- Belle Mare and Trou d'Eau Douce (East coast)
- Blue Bay and Pointe Jerome (South East)
- Bel Ombre (South)
- Flic en Flac and along the Le Morne peninsula (South West)
- Islands such as Île aux Cerfs and Gabriel Island

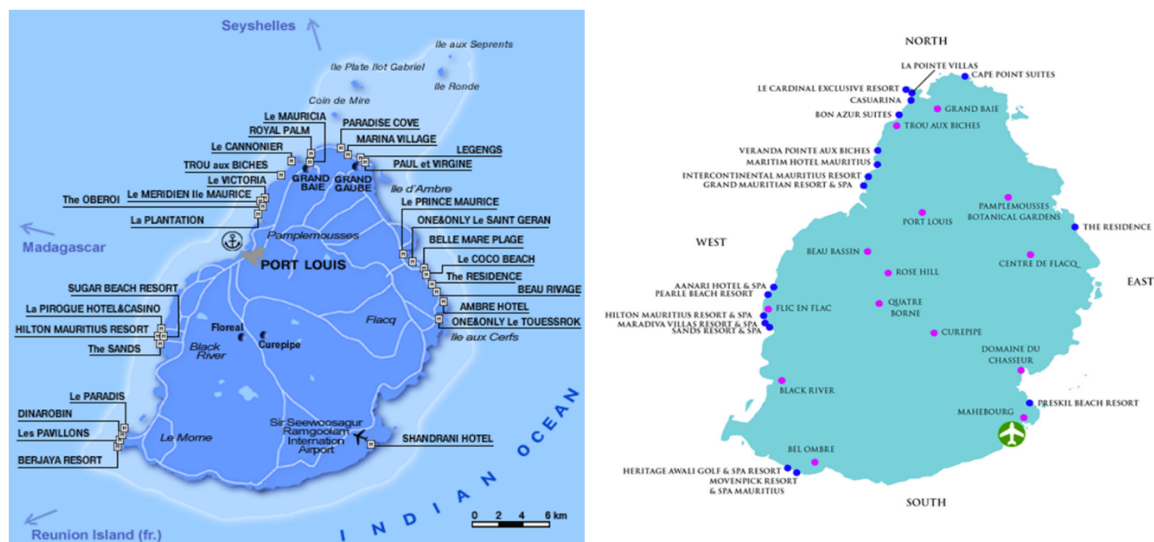


Figure 4: Large hotel establishments (left) and Resort establishments on the main island of Mauritius

Source: Mauritius Attractions, 2023

Mauritius has made significant progress in developing regulation that harmonises tourism activities and development within the coastal zone. Initially, tourism development was characterised by ad hoc development, insufficient planning, and a lack of regulations. This changed in 2000 with the introduction of the National Tourism Development Plan (NTDP) (Deloitte and Touche, 2002). The NTDP repositioned the country as a high-quality, upmarket destination and aimed to limit the negative impacts of tourism on island ecosystems (Prayag et al., 2010). The NTDP was followed by the Tourism Authority Act (2006), which provided for more efficient regulation and management of tourist enterprises and pleasure craft and a move to eco-friendly, energy efficient practices. The revised Hotel Development Strategy (HDS) (2008) encouraged foreign direct investment and promoted sustainable tourism development (MoTLEC, 2008).

Challenges

- A lack of adherence to policy, regulatory and planning efforts is sometimes evident, which can culminate in stakeholder conflict
- Coastal development and expansion have also generated sustained user conflicts with fishers and led to significant environmental degradation
- Sedimentation and pollution from land-based activities
- A high proportion of tourists take part in reef-based tourism, and this has created conflicts with other users (fishers and industry) (Ramessur, 2002)

Opportunities

- Ocean-based water activities such as yachting, skiing, boating, recreational and sport fishing, snorkelling
- Establishment of national, regional, and international competitions (yachting, diving, regattas, triathlons etc.)
- Focus activities around protected and pristine areas, eco-tourism activities

6.5. Ports and Shipping

Situated on the North-West coast of Mauritius, Port-Louis is the capital city and the only commercial port on the island. Port-Louis harbour is the principal gateway of Mauritius and plays a vital role in the national economy, handling about 99 per cent of the total volume of the country's external trade. With its strategic location in the Indian Ocean, Port-Louis harbour is an excellent interface between Africa, Asia, and Europe. In this context, the port has been transformed into a regional trade hub, with the focus on transshipment of containers and fish, seafood processing, bunkering, cruise activities and other ancillary services. This is intended to bring in substantial additional income from outside of Mauritius, as well as serving the needs of an expanding domestic economy.

To consolidate the position of Port Louis as a regional transshipment port, in 2016 the Authority embarked on the expansion of the container stacking areas, the extension of the quay at the container terminal from 560 to 800 metres, and the further deepening of the navigational channel from 14.5 to 16.5 metres. However, the difficult external economic environment has taken its toll on port trade performance; total cargo traffic declined by 1.7 percent from 7 665 603 tonnes in FY21/22 to 7 534 454 tonnes in FY22/23, mainly driven by a reduction in bunker sales volumes.

Challenges

- Growing competition from regional ports, particularly those in Madagascar in the near term. The risk of Port Louis status being downgraded from regional transshipment hub to feeder port is significant, jeopardising economic resilience and intensifying economic vulnerability.
- Port Louis harbour is vulnerable to climate change and exposed to various risks including large swells, strong wind gusts, and storm surges which result in the cessation of operations for several days thus disrupting the supply chain.
- Bunkering has declined drastically partly due to competitive bunkering hubs in the region and price volatility.
- Limited financial resources owing to a small captive market represents a constraint for future expansion.
- Lingering productivity inhibiting growth of transshipment business

Opportunities

- Port Louis has not reached its full potential for the transshipment of fish, according to the national exports strategy
- By enhancing the port efficiency, Port Louis harbour, which enjoys the first mover advantage, will continue to be the preferred transshipment hub for shipping lines
- Cruise traffic is expected to recover rapidly as Port Louis has been upgraded to homeporting status. Indeed, this region is growing in popularity. With the emergence of new sourcing markets such as South Africa, India, China, and Australia, the cruise industry in this region is expected to experience marked development in the medium-term.

- Some 35 000 vessels are voyaging close to Mauritius every year, which provides good opportunities for bunkering and ancillary services.
- The development of a petroleum hub including LNG and offshore bunkering

7. Emerging Blue Economy Sectors

7.1. Offshore extractive industry-hydrocarbon and seabed minerals

Mauritius has embarked on an evaluation of the hydrocarbon potential in its maritime zone and is also considering opportunities for deep seabed mining in waters beyond its national jurisdiction. The discovery of hydrocarbon reserves off the coast of East Africa and Madagascar significantly increases the prospects for hydrocarbons in Mauritian EEZ. Furthermore, the discovery in 2009 of inactive hydrothermal fields within the EEZ indicates the likelihood of mineral deposits. Previous international expeditions have also discovered fields of polymetallic nodules and mineral ore in ocean basins close to the Mauritian EEZ (AfDB, 2020). The priority is now the development of a sustainable legal framework that will address short- and long-term needs and opportunities for the country regarding the offshore extractive industry.

7.2. Deep sea water for air conditioning

Sea Water Air Conditioning (SWAC) is an innovative and eco-friendly cooling technology that uses cold seawater from the deep ocean to air-condition buildings and industries. It operates by exploiting the temperature difference between warm surface water and cold deep-sea water. The process involves drawing cold seawater from depths of 600 to 1 200 metres, using it in a heat exchanger to cool a freshwater loop for air conditioning, and then returning the slightly warmed seawater to the ocean at shallower depths. SWAC offers energy efficiency, harnesses renewable resources, reduces greenhouse gas emissions, and has a scalable design suitable for various urban environments, all while requiring minimal land usage compared to conventional cooling systems.

SWAC has seen successful deployments in various locations globally, with notable examples in Hawaii, where NELHA has operated a SWAC system since 1994 to cool commercial facilities. Additionally, Caribbean islands like Grand Cayman and Bonaire have adopted SWAC for cooling hotels and resorts, while Stockholm, Sweden, uses SWAC at the Kaknäs Tower, benefiting from the cold waters of the Baltic Sea. These examples demonstrate the technology's versatility and its ability to provide sustainable cooling solutions in diverse regions.

SWAC's potential contribution to the blue economy lies in its sustainable and environmentally friendly nature. By reducing energy consumption and emissions, it aligns with the principles of the blue economy.

7.3 Use of Offshore Renewable Energy

Offshore renewable energy can considerably contribute towards the expansion of renewable energy capacity for coastal and island countries, while helping to lower the energy costs associated with importing fossil fuels. Government has set a target for the development of renewable energy to reach 35 percent in 2025 and 40 percent in 2030 in terms of its

contribution to the total energy mix?. This is also a mitigation measure that will help Mauritius reduce its GHG emissions under the Nationally Determined Contribution (NDC) pledge. The MARENA, in collaboration with the Mauritius Research and Innovation Council (MRIC) and the Central Electricity Board (CEB), has initiated schemes under which marine renewable energy pilot projects (less than 200 kW) technologies can be established.

The Government of Mauritius is strongly committed to mitigating the negative impacts of climate change. This cannot be done without a proper energy transition. Mauritius has set the objectives of achieving 60 percent of RE in its energy mix, phasing out coal, decreasing its GHG emissions by 40 percent, and having a 10 percent level of Energy Efficiency by 2030. A RE Roadmap was published in 2022 to show the path to 60 percent of RE by 2030. In view of limitations to exploit renewable energy due its land mass, Mauritius has no choice than to exploit the possibilities to tap in the ocean RE technologies. A pre-feasibility study was carried out by the DTU (Danish Technical University) in collaboration with UNEP and a validation workshop was held on the 5th of October 2023. As per the RE roadmap, it was mentioned that 2x50MW of offshore wind facilities were to be deployed by 2030.

7.4 Marine biotechnology

The Mauritius Oceanography Institute (MOI), together with other related public and private institutions, have engaged in numerous marine biotechnology studies. The MOI has an extensive database of preliminary projects which can be considered for commercialisation. Opportunities exist for companies interested in bioprospecting, isolation, and commercialisation of biotech organisms. Several organisations such as the Mauritius Research and Innovation Council, the Centre for Biomedical & Biomaterials Research, and the national Food and Agricultural Research & Extension Institute support the biotechnology industry through their research. Some activities in this field are already underway as three companies are involved in fish oil extraction, and production and extraction of molecules from by-products for different applications. Sealife Organics was launched in Year 2020 with commercialisation of natural seaweed-based products which are available in a growing number of outlets across the island.

8. Vision

“Mauritius, positioned as a prominent force in blue economy activities within the Western Indian Ocean region, setting a global example towards a resilient future”.

9. Mission

A set of tangible, fully transparent, robust and measurable actions for achieving a resilient blue economy in Mauritius

10. The Policy Statements for Mauritius

Based on the Vision and Mission statements for the Blue Economy, this report formulates policy statements that aim to foster sustainable economic growth, environmental guardianship, and enhanced livelihoods by promoting the responsible utilisation of the ocean and other marine resources. It will be important to have political and financial commitment for these critical policy issues.

Policy Statement 1: Establish Cross-sectoral and Inclusive Governance Frameworks

Policy Strategies

- Establish clear goals, targets, and performance metrics across priority Blue Economy sectors to enable tracking progress over time. This will enhance accountability and transparency.
- Establish robust monitoring and evaluation mechanisms to assess the progress of Blue Economy initiatives, track the achievement of targets, identify areas for improvement, and ensure full transparency in reporting and data sharing
- Establish interagency collaboration mechanisms
- Participate in regional and international initiatives such as the Indian Ocean Commission, SWIOFC, Tuna Commission and Indian Ocean Rim Association
- Establish funding mechanisms targeted at cross-cutting (between blue economy and other sectors) and innovation solutions
- Foster international and regional cooperation on coastal hazard management
- Collaborate on information sharing, early warning systems, and coordinated responses
- Collect and share data to inform evidence-based coastal management

Policy Statement 2: Secure Sustainable Capture Fisheries

Policy Strategies

- Adopt Ecosystem-Based Management Approaches including Ecosystems Approach to Fisheries, the FAO Code of Conduct on Responsible Fishing, the FAO voluntary instrument for Securing Sustainable Small-Scale Fisheries and the guidelines presented therein, as well as the FAO Technical Guidelines for Aquaculture Development, as well as the relevant provisions of the SADC/IOC Protocol on Fisheries
- Adopt science-based management by establishing a fisheries scientific working group made up of scientists, public sector fisheries managers, NGOs and fishers
- Adopt full transparency between all stakeholders and include stakeholders in management decisions; adopt co-management strategies.
- Promote the sustainable utilisation of the artisanal lagoon fishery, off-lagoon fishery, and bank fisheries by establishing a monitoring program at landing sites, fitting vessels with VMS systems, and creating a data feedback loop to fishers
- Pilot and trial closed seasons for selected species during spawning seasons
- Establish Recreational Fishery quotas (bag and size limits) and licensing system
- Fishing in the Joint Management Zone
- Establish state of the art MCS programs that are enforceable, and make use of ICTs where available
- Equip all boat-based small-scale and artisanal fishers with VMS devices
- Establish seafood safety standards for all local and export products
- Establish R&D program for alternate value-added products
- Assess feasibility of alternative export and local markets
- Establish comprehensive fishery management plans for each fishing sector

Policy Statement 3: Promote Environmentally Responsible Aquaculture

Policy Strategies

- Improve access to finance through sensitisation of financial institutions to the aquaculture industry
- Streamline the permitting and licensing system as a “One-Stop Shop”, to handle all aspects of the licence application process
- A public engagement plan should be drafted and implemented to address the social resistance to aquaculture
- Adopt the Ecosystems Approach to Aquaculture, the FAO Technical Guidelines for Aquaculture Development, as well as the relevant provisions of the SADC/IOC Protocol on Fisheries

- Implement a knowledge transfer programme whereby an expert/s provides early management and implements a training and capacity building programme for local resources (e.g., train the trainer programmes).
- Establish an aquaculture scientific working group made up of scientists, public sector, NGOs and private sector farmer and fisher representatives
- Remain up-to-date with global Best Management Practices (BMPs)
- Establish strict regulations on the culture of non-native species
- Conduct a spatial mapping and environmental impact assessment exercise of the waters surrounding Mauritius to identify suitable and non-suitable areas for aquaculture development; this includes offshore areas
- Promote bilateral cooperation for aquaculture development
- Promote the culture of sessile species (e.g., sea cucumbers, oysters etc.) in suitable coastal areas
- Establish seafood safety standards for all local and export products
- Establish R&D program

Policy Statement 4: Adopt ICT-driven Innovation and Research

Policy Strategies

- National Ocean Exploration Programme
- Promote research and exploration into developing marine bio-products and marine biomedical products
- Establish dedicated ICT training programs and partnerships focused on areas like AI, spatial data analysis, drone operations, IoT sensors and coastal modelling
- Promote the adoption of artificial intelligence, machine learning and imagine recognition into all aspects of the blue economy sector
- Establish an ocean data and information system
- Invest in research and technology to improve coastal hazard modelling, early warning systems, and risk assessment tools
- Encourage innovation in resilient infrastructure and coastal protection measures
- Establish a MCS and VMS database and task team

Policy Statement 5: Develop the Future Blue Economy Workforce and Promote Education, Sensitisation and Public Awareness

Policy Strategies

- Implement a national strategy for ocean knowledge
- Promote gender equality and involvement of women across Blue Economy fields through scholarships, apprenticeships targeting women.
- Establish a national ocean forum with recognised ocean associations

- Partner with the public aquarium to raise awareness and promote ocean education and literacy
- Coordinate ocean education: Establish Ocean Science curricula in schools and universities
- Develop blue economy related curriculum for secondary education
- Develop blue economy curriculum for tertiary education
- Establish technical blue economy departments for vocational training
- Promote blue economy related careers
- Graduate trainee programmes and internships in blue economy industries
- Provide state scholarships/bursary programs for students
- Expose tertiary educators to international research opportunities
- Hold annual Blue Economy Forum/Summit/Conference
- Educate the public on how to respond to warnings and evacuation procedures for climate related hazards
- Conduct public awareness campaigns to educate coastal residents about tsunamis, storm surges, and coastal flooding risks
- Encourage community participation in disaster preparedness and response planning
- Strengthen local government capacity for coastal hazard management, including training for emergency response and evacuation procedures
- Support local communities in developing community-based disaster preparedness plan

Policy Statement 6: Improve Maritime Transport, Trade, and Infrastructure

Policy Strategies

- Introduce an automated VMS covering Mauritius's territorial water to ensure adequate communications between the port traffic controls and freighters
- Simplify customs procedures at the port of entry with modern ICT to handle administrative clearance in critical areas (customs, health, technical standards, and tax)
- Promote Port Louis as a leading port for international ship registration
- Target the developing aquaculture and fisheries sub-sectors to increase production of value-added products to improve the balance of trade and build linkages with the export of other sectors products (e.g., agriculture)
- Establish 'preparedness for emergencies' protocols to mitigate against any port or maritime transport issues (ship damage, oil discharge, piracy, increased wave action)
- Establish more affordable and easier transport between islands

-

Policy Statement 7: Promote and Commit to Renewable Energy Development

Policy Strategies

- Establish an enabling environment (legal and regulatory framework) for investment into renewable energy
- Promote renewable energy use by creating linkages between the public sector and the private sector through partnerships and joint ventures
- Conduct or commission research on the feasibility of alternative sources of energy: Ocean-based energy, wind and wave/tidal energy and ocean thermal energy conversion (OTEC)
- Undertake research on the prospects for undersea mineral exploration and exploitation
- Undertake research on the prospects for hydrocarbon exploration and exploitation
- Formalise partnerships with international universities and research centres focused on renewable energy innovation from marine environments
- Cultivate specialised local technical capacity and education programs to support engineering, construction, operation, and maintenance of ocean-based renewable energy systems
- Explore using existing port and harbour infrastructure for building out renewable energy manufacturing, construction, deployment and servicing

Policy Statement 8: Promote Sustainable, Diverse and Inclusive Tourism

Policy Strategies

- Support associated industries such as tourism apparel, supply of water sport equipment and sponsor events making use of coastal areas
- Promote water sports and marina/port activities, such as regattas, triathlons, boating, yachting etc.
- Create a sustainability focussed label for tourism operators to attract visitors. This label should require the adoption of sustainability practices such as energy and carbon reduction, habitat and ecosystem improvement, water, sanitation, and hygiene management as well as economic and social impact on the local population
- Empower and acknowledge local cultures and values
- Promote tourism areas around protected areas
- Develop partnerships between the tourism sector and the management of the coast, including management and rehabilitation of the lagoon and associated infrastructure.

Policy Statement 9: Strengthen Coastal Planning

Policy Strategies

- Establish coastal zones with appropriate land use regulations, defining areas for conservation, development, tourism, and infrastructure. Proper zoning helps prevent haphazard development and protects sensitive coastal habitats
- Integrate disaster risk reduction measures into coastal planning and create hazard maps and risk profiles
- Identify areas prone to hazards and implement measures such as early warning systems, coastal protection structures, and evacuation plans
- Integrate disaster risk reduction measures into coastal planning
- Establish a Marine Spatial Planning (MSP) unit
- Enforce strict building codes for new constructions in coastal regions to ensure structures can withstand coastal hazards. Offer incentives or funding for retrofitting existing buildings to improve their resilience to tsunamis and coastal flooding
- Conduct a spatial mapping and environmental impact assessment exercise of the waters surrounding Mauritius to identify suitable and non-suitable areas for aquaculture development; this includes offshore areas

Policy Statement 10: Identify and Establish Coastal Conservation and Protection Programs

Policy Strategies

- Conduct high resolution mapping of entire coastline to identify areas most vulnerable to erosion, flooding, and habitat degradation to inform zoning and interventions
- Build synergies and long-term monitoring programs and projects with NGOs
- Identify point and nonpoint sources of pollution and establish mitigation programmes
- Protect and restore coastal ecosystems such as mangroves, salt marshes, and dunes, which act as natural buffers against tsunamis and storm surges
- Implement measures to prevent coastal erosion, such as beach nourishment and dune restoration
- Increase Marine Protected Area coverage by 30 percent by 2030
- Explore innovative financing models like blue carbon credits to fund large-scale mangrove and seagrass restoration efforts
- Cultivate a stewardship ethic regarding coastal areas through expanded curriculum in schools, public awareness campaigns, and community projects

Policy Statement 11: Commit to a Resilient Blue Economy in the face of Climate Change

Policy Strategies

- Conduct vulnerability assessments across priority Blue Economy sectors and assets to quantify risks and inform adaptation priorities
- Integrate climate change projections into coastal hazard management plans to anticipate the increased frequency and intensity of coastal hazards
- Develop adaptive strategies to address changing coastal conditions due to climate change
- Establish a climate change monitoring and advisory platform to inform decision making
- Cultivate cross-border regional collaborations such as research partnerships and early warning system data sharing to leverage capabilities
- Commit to education and training programs to continuously advance human capacity in areas like risk modelling, vulnerability assessments, and adaptation planning

11. The Policy Statements for Rodrigues

Policy Statement 1: Unlock the potential of off-lagoon fisheries

Policy Strategies

- Conduct stock assessment surveys of key off-reef fish species to determine sustainable catch levels
- Expand FAD deployment and monitoring by the Fisheries Department research vessel to augment catches
- Initiate experimental offshore shrimp and other new fisheries, following science-based protocols to ensure sustainability
- Establish an entrepreneurship and business training program for offshore fishers to improve viability
- Implement periodic maintenance and upgrade schemes to enhance durability of existing offshore vessels
- Develop cooperatives and community partnerships for pooled offshore fishing resources and collective marketing. This spreads costs and risks across multiple families
- Foster next generation participation through apprenticeship programs for youth focused on advanced offshore fishing knowledge and techniques combined with attractive financial packages
- Establish dedicated local cold storage infrastructure in Rodrigues, enabling longer trips. Market to resorts/exporters for premium prices given uniqueness of sustainably caught fish
- Develop locally relevant supplementary/alternative livelihood programs for months when weather reduces offshore feasibility, improving income stability
- Over the long term, cultivate greater enthusiasm and passion for offshore fishing as a cultural calling and noble profession among Rodrigues communities through consistent messaging in schools and community centres

Policy Statement 2: Improved Fisheries Management

Policy Strategies

- Develop comprehensive fisheries management plans for each sector
- Consider establishing a council with representatives from both government and key fishing associations/cooperatives to promote collaborative policies and compliance
- Expand educational and hands-on training partnerships
- Collect higher resolution catch and socioeconomic data to enhance management plans and understanding of activities, challenges, successes

- Develop community partnership agreements and participatory management plans for existing and proposed marine reserves outlining roles, responsibilities, boundaries, rules, enforcement protocols
- Research regional best practices and innovations in areas like co-enforcement models and climate-adaptive planning that could be adapted to Rodrigues's fisheries
- Foster greater youth engagement with both marine conservation areas and offshore fishing through hands-on educational activities and future career exposure

Policy Statement 3: Develop Sustainable and Certified Seafood Processing Sector

Policy Strategies

- Provide training and infrastructure for high quality, certified sustainable seafood exports
- Foster community partnerships and co-management in seafood production
- Research innovations in extending shelf-life and enhancing quality
- Market uniquely branded and certified Rodrigues sustainable seafood globally
- Increase processing capacity
- Consider enacting policies requiring foreign commercial vessels to land minority catch percentages at Rodrigues port to supply processing growth

Policy Statement 4: Accelerate Growth in Sustainable Tourism

Policy Strategies

- Incentivise and certify sustainable tourism operators meeting environmental standards
- Increase support to marine conservation organisations to ensure health of environment that attracts tourists
- Develop hands-on 'voluntourism' opportunities for visitors to engage in areas like coral replanting, mangrove propagation, and supporting turtle nesting sites
- Showcase and protect natural assets like coral reefs and marine parks that underpin tourism
- Foster community-based tourism ventures and cultural attractions
- Diversify high-end eco-lodge offerings along with mainstream options
- Implement water use monitoring, low-flow fixtures, greywater recycling and other conservation initiatives to aid tourism growth without environmental strain
- Conduct a detailed feasibility study assessing the costs, benefits and risks associated with developing capacity to host regular cruise ship visits to Rodrigues.

- Showcase commitments to sustainability, climate resilience, and community benefit as the core ethos underpinning Rodrigues tourism through consistent branding and promotion
-

Policy Statement 5: Develop Sustainable and Climate-Resilient Water Infrastructure

Policy Strategies

- Construct new water capture, storage, purification, and distribution systems using climate resilient designs
 - Implement water conservation and efficiency programs to reduce demand
 - Utilise renewable energy like solar PV to power water infrastructure
 - Explore innovations like rainwater harvesting, desalination, and wastewater recycling
-

Policy Statement 6: Expand Renewable Ocean Energy

Policy Strategies

- Assess feasibility of offshore solar, wind, wave, and tidal renewable energy sources
 - Establish legal frameworks and incentives to attract private investment into ocean renewable projects
 - Support hybrid systems combining multiple ocean energy technologies for greater resiliency
 - Set public renewable energy contribution targets to achieve (ex: 60 percent by 2030)
-

Policy Statement 7: Advance Low-Input Sustainable Aquaculture

Policy Strategies

- Identify suitable zones for mariculture of seaweed, pearl oysters and other species
- Research the cultivation feasibility and market demand for high value species like sea cucumbers
- Develop streamlined regulatory frameworks, permitting processes, and availability of sites to attract commercial investment into mariculture operations
- Develop commercial partnerships with private sector for production and marketing
- Provide training programs on best practices for small-scale mariculture

Policy Statement 8: Enhancing Ports and Airport Infrastructure

Policy Strategies

- Conduct feasibility studies for adding a supplementary passenger jetty and expanding cargo pier infrastructure to enable handling of larger freight volumes
- Expand cargo and passenger capacity at sea port and airport
- Develop disaster response plans identifying priority supplies, critical infrastructure hardening opportunities, logistics partnerships to improve resilience

12. Funding and potential fund sources

To develop Mauritius' blue economy, investment in all aspects of the value chain and sector are required. These include infrastructure, conservation, research and development, institutional and human capacity development, information-sharing and knowledge-building and ICT. Moreover, these require long-term financing to ensure their longevity. The Mauritian government must also facilitate access to insurance coverage and financial mechanisms for individuals, businesses, and communities and promote risk-transfer mechanisms, such as catastrophe bonds, to offset the financial burden in case of coastal disasters.

The AfDB report (Sultan, R. & Munyaradzi, F. 2020) identified several financial options that could be leveraged to fund and finance a sustainable blue economy in Mauritius. These include Blue carbon financing, Blended financing (combination of public and private involvement), Blue Bonds, Debt swaps, Development Impact Bonds and Blue Levies amongst others.

12.1. Blue Bonds

The Republic of Seychelles issued the world's first sovereign blue bond to support the development of its blue economy into a sustainable fishing industry and other ocean-based initiatives. The bond, structured in collaboration with The World Bank, demonstrates the potential for countries to harness capital markets for financing the sustainable use of marine resources. In Mauritius, the Financial Services Commission (FSC) of Mauritius issued guidelines on 23 December 2021 for the issue of corporate and green bonds (including blue bonds) which set out the regulatory requirements to be adopted by issuers in line with the international best practices.

12.2. Green Climate Fund

Since 2015, the Green Climate Fund (GCF) has been the largest contributor to small island developing states (SIDS). In 2022, USD 173 million was approved for projects in SIDS. Some 57 percent of this is programmed by the GCF, which also accounts for the 12 largest projects in SIDS (Watson et al., 2023). The GCF has funded several projects in Mauritius and could be a source of funding for climate-related initiatives. (Green Climate Fund, 2023).

12.3. Economic Development Board

The Economic Development Board (EDB) is actively assessing investment opportunities that promote coastal tourism, fishing, seafood processing and seaport activities that are also considered traditional ocean activities (EDB, 2023-1). The aim is to increase the share of GDP of the blue economy to 20 percent in the medium term. The strategy would be to work not only on the consolidation of traditional activities but also develop emerging ones such as aquaculture, maritime services, marine biotechnology, and oil & gas exploration.

12.4. Crowdsourcing and diaspora financing

Mauritius has a growing diaspora and is a potential source of funding in the sustainable development of the blue economy. Projects supported by the diaspora in other sub-Saharan countries include housing, infrastructure, agribusiness, manufacturing, technology, and

healthcare. To encourage the Mauritian diaspora to invest, quality assurances need to be provided and investments guaranteed. The Government of Mauritius can also connect the diaspora with certain blue economy investment opportunities. This will improve transparency, legal and regulatory frameworks and may provide tax incentives to support specific projects on the Island. Areas of interest to Mauritian diaspora may include ocean renewable energy and sustainable aquaculture.

12.5. Private Sector

While public sector investment is pivotal to the establishment of a blue economy, private sector investment is crucial for scaling a blue economy with long-term sustainability. The public sector must create an enabling environment by issuing a regulatory framework to ease business entry. Consequently, the private sector can direct investment into activities that grow the blue economy. Therefore, private capital can increase the available funding for governments to address development associated with blue economy projects.

12.6. Multilateral Development Banks

Multilateral development banks (MDBs) like the World Bank, African Development Bank (AfDB), and Asian Development Bank (ADB) have substantial pools of capital that can be deployed towards sustainable blue economy projects and policy implementation in Mauritius.

Specifically, the World Bank has already supported blue economy initiatives in Mauritius through prior analytical work and programmatic lending. The AfDB is increasingly prioritizing the blue economy across Africa and has regional facilities that Mauritius could leverage. The ADB also has a strong focus on ocean health and marine preservation across Asia.

MDBs offer a range of flexible lending instruments like investment project financing, results-based loans, policy-based financing, and adaptable program loans that could align with Mauritius's priorities. They also provide technical assistance and share risk with private investors which may be crucial for catalysing innovation.

12.7. Impact Investors

Mauritius can target impact investors looking to fund scalable blue economy businesses and generate measurable social and environmental impact alongside financial returns. Leading impact funds like Mirova, KawiSafi, Meloy, Circulate Capital, and the Blue Natural Capital Financing Facility have billions under management for sustainable aquaculture, fisheries supply chain upgrades, maritime transport decarbonization, waste management innovations, and more.

By establishing supportive policies, information access mechanisms, and public-private partnerships, Mauritius can reduce due diligence costs and risk perceptions for impact investors. This expands the pool of capital to fund blue SMEs and projects. Impact metrics and reporting requirements also improve transparency and accountability in delivering on development objectives.

13. Conclusion

Realising Mauritius's immense blue economy potential requires concerted efforts across sectors, ministries, communities, and partners - but the payoffs for inclusive and sustainable development make it imperative. This national policy puts forward an ambitious yet achievable vision and mission so Mauritius can harness its extensive ocean assets to improve livelihoods and cement leadership in the global blue economy.

The policy statements and priority strategies target fisheries, tourism, ports, emerging industries and more for environmentally and socially responsible growth. They emphasise capabilities like fostering innovation, adaptation planning, participatory governance, integrated monitoring and advancing regional collaborations. Successful implementation will depend on securing adequate financing, strong institutions, harnessing science and technology, extensive capability building and community participation.

With diligent efforts, Mauritius is poised to sustainably expand output and revenues from its oceans while safeguarding the natural capital that underlies enduring prosperity. The blue economy policy provides a roadmap for climate-smart, technologically advanced, and ethically guided development that balances production with preservation. It underscores transparency, evidence-based decisions, and cooperation to elevate Mauritius as a beacon for equitable blue growth across the Western Indian Ocean and beyond. Pursued holistically with broad participation, the policy can help chart a course towards lasting social, economic, and environmental resilience.

Annex 1

Participants of the Consultative Meeting held with Stakeholders at the Caudan Arts Centre, Mauritius on 10th July 2023:

| Name | Designation | Organisation |
|-----------------------|--|---|
| Mrs Dhanita Ramdharee | Deputy Permanent Secretary | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Captain Asiva Coopen | Director of Shipping | Shipping Division, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Kevin Ramkaloan | Chief Executive Officer | Business Mauritius, |
| Mr. G.S. Coolen | State Counsel | Attorney General's Office, |
| Mrs. Archana Audit, | Lead Professional | Economic Development Board |
| Mr Pradeep Neermul | Divisional Scientific Officer (Fisheries) Assigned duties of Assistant Director (Fisheries)(Temporary) | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Gurudutt Dhunnoo | Divisional Scientific Officer (Fisheries) | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Sylvio Perrine | Scientific Officer | Rodrigues Regional Assembly - Commission of Fisheries |
| Ms Priya Ramnauth | Tourism Enforcement Officer | Ministry of Tourism |
| Mr K. Beemadoo | Chairman | Fishermen Welfare Fund, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Vinesh Emrith | Divisional Scientific Officer (Fisheries) | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr M. A Moorghen | Principal,(assigned duties of Head MMTA) | Mauritius Maritime Training Academy, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Vikash Munbodhe | FAO_MAR-3801 Project Coordinator Scientific Officer / Senior Scientific Officer (Fisheries) Assigned duties of | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |

| Divisional Scientific Officer (Fisheries) | | |
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| Dr Hemanaden Runghen | Director - Ocean Mapping/Marine Information System Unit | Department for Continental Shelf, Maritime Zones Administration and Exploration, Prime Minister's Office |
| Dr Arshad Rawat | Director (Physical Oceanography /Marine Geoscience Unit) | Department for Continental Shelf, Maritime Zones Administration and Exploration, Prime Minister's Office |
| Dr P. E. Daniel MARIE | Officer-in-Charge, Deputy Director | Mauritius Oceanography Institute, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mrs Kiran Shamloll | Secretary for Shipping Development | Shipping Division , Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr R Seenauth | Divisional Environment Officer | Ministry of environment , Solid Waste Management and Climate Change |
| Mr J Iqbal Mosaheb | Principal Research Scientist | Mauritius Oceanography Institute, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Dr Manvendra Singh | Principal Research Scientist | Mauritius Oceanography Institute, (Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Prakash Mussai | Principal Research Scientist | Mauritius Oceanography Institute, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Boodia | Secretary | Fishermen Welfare Fund, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr B Sahody | | Ministry of Environment , Solid Waste Management and Climate Change |
| Ms Yuneeda Oozeraully | Research Development Officer/SRDO | Department for Continental Shelf, Maritime Zones Administration and Exploration, PMO |
| Dr (Mrs) Poonam Veer Ramjeawon | Research Coordinator | Mauritius Research and Innovation Council |
| Dr (Mrs) Sushma Mattan-Moorgawa | Faculty of Science | University of Mauritius |
| Dr Vishwakalyan Bhoyroo | Faculty of Agriculture | University of Mauritius |
| Mrs Prerna Roy | Associate Research Scientist | Mauritius Oceanography Institute, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |

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| Mr Posooa | Finance Officer | Fishermen Welfare Fund, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Ms Juliana Dedans | Technical Officer, | Competent Authority, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Ms Ranjeeta Boyjoonauth | Public Relation Officer | Mauritius Oceanography Institute, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Dr Bhikajee Mitrasen | Consultant | FAO |
| Dr James McCafferty | Consultant | FAO |
| Mrs Minakshi Pallut | Project Assistant | FAO |
| Mr Ricardo Auckhaya | Project Assistant | FAO |

In addition to the consultations held with the above persons during the meeting, individual consultations were also held with the following:

| Name | Designation | Organisation |
|----------------------------|--------------------------------|---|
| Mr. Veersingh Boodhna | Permanent Secretary | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping. |
| Dr Rezah Badal | Director General | Department for Continental Shelf, Maritime Zones Administration & Exploration, Prime Minister's Office |
| Prof Mohammad Santally | Pro Vice Chancellor (Academia) | University of Mauritius, Acting as Vice Chancellor on the day of the meeting |
| Dr. Désiré Yannick Tangman | Dean | Faculty of Science, University of Mauritius. |
| Dr. Deepeeka Kaullysing | Senior Lecturer | Department of Biosciences & Ocean Studies, Faculty of Science, University of Mauritius |
| Mr Ramchurn Seenauth | Divisional Environment Officer | Integrated Coastal Zone Management Division, Ministry of Environment, Solid Waste Management and Climate Change |
| Devindranath Dindyal | Divisional Environment Officer | Ministry of Environment, Solid Waste Management and Climate Change |
| Ms Henna Ramdour | Environment Officer | Ministry of Environment, Solid Waste Management and Climate Change |

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| Mrs Seenarain Neermala | Environment Officer | Sustainable Development Division, Ministry of Environment, Solid Waste Management and Climate Change |
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| Mrs. Paola Li Shuk Kung- Toofany | Senior Tourism Planning Executive | Ministry of Tourism |
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| Mrs. Priya Aubeeluck | Tourism Executive | Planning Ministry of Tourism |
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Annex 2

During the Consultative Meeting, a Steering Committee was set up to oversee the formulation of the Policy Document and to advise the consultants. The composition of the Steering Committee was as follows:

| Name | Designation | Organisation |
|-----------------------------------|---|---|
| Mrs Dhanita Ramdharee | Chairperson of the Steering Committee Deputy Permanent Secretary | Ministry of Blue Economy, Marine Resources, Fisheries and Shipping |
| Mr Vikash Munbodhe | Project Coordinator Scientific Officer / Senior Scientific Officer (Fisheries) Assigned duties of Divisional Scientific Officer (Fisheries) | FAO_MAR-3801 Ministry of Blue Economy, Marine Resources, Fisheries and Shipping. |
| Captain Asiva Coopen | Director of Shipping | Shipping Division |
| Mrs Kiran Shamloll | Secretary for Shipping Development | Shipping Division |
| Mr M. A Moorghen | Principal,(assigned duties of Head ,MMTA | Mauritius Maritime Training Academy |
| Mr Boodia | Secretary | Fishermen Welfare Fund |
| Mr R Seenauth | Divisional Environment Officer | Ministry of environment , Solid Waste Management and Climate Change |
| Dr (Mrs) Poonam Veer Ramjeawon | Research Coordinator | Mauritius Research and Innovation Council |
| Dr P E Daniel Marie | Officer-in-Charge | Mauritius Oceanography Institute, |
| Ms Priya Ramnauth | Tourism Enforcement Officer | Ministry of Tourism |
| Mr G S Coolen | State Counsel | Attorney General's Office, |

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| Ms Juliana Dedans | Technical Officer, | Competent Authority |
| Dr Arshad Rawat | Director (Physical Oceanography /Marine Geoscience Unit) | Department for Continental Shelf, Maritime Zones Administration and Exploration, |
| Mrs Archana Audit, | Lead Professional | Economic Development Board |
| Mr Sylvio Perrine | Scientific Officer | RRA -Commissioner of Fisheries |
| Dr (Mrs) Sushma Mattan-Moorgawa | Faculty of Science | University of Mauritius |

Annex 3

Participants of the Consultative Meeting held with Stakeholders in the Conference Room of the Commission for Fisheries, Rodrigues on Wednesday 22 November 2023.

| Name | Designation | Organisation |
|--------------------------|--|---|
| Sooprayen Sanjay | Departmental Head | Commission for Fisheries |
| Sylvio Perrine | Scientific Officer | Commission for Fisheries |
| Leopold Vierge | Technical Officer | Commission for Fisheries |
| Ravanne Archange | Technical Officer | Commission for Fisheries |
| Cenette Hypolite-Leopold | Administrative Officer | Commission for Fisheries |
| Rémy M. Caroline | Tourism Promotion Officer | Commission for Tourism |
| Ravina J. Jean Maurice | Coordinator | Mauritius Research and Innovation Council. Ter-Mer Rodrigues |
| Bryan Young Tie Yang | Staff | Mauritius Research and Innovation Council |
| Jameson Lisette | Senior Fisheries Protection Officer, | Commission for Fisheries |
| Raboude Jean Ludovic | Fisheries Protection Officer, | Commission for Fisheries |
| Cesar Catriano | Fisheries Protection Officer, | Commission for Fisheries |
| Albert Jean Jefferson | Fisheries Protection Officer, | Commission for Fisheries |
| Guillaume Marie Tracy | Scientific Officer (Trainee) | Commission for Fisheries |
| Shane Berty Etienne | Occupational Safety and Health Officer | Commission for Fisheries |
| Krishna Chikhuri | Consultant | FAO |
| Warwick Sauer | Consultant | FAO |
| Jim McCafferty | Consultant | FAO |
| Mitrasen Bhikajee | Consultant | FAO |

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