



Call for stakeholder input on studies on marine plastic pollution and the circular economy

The Indian Ocean Commission (IOC), the only African Island States intergovernmental organization, promotes regional cooperation for sustainable development. The IOC has initiated three studies on marine plastic pollution and the circular economy in the eight AIODIS (African and Indian Ocean Island Developing States) countries.¹ The studies are backed by the SWIOFish2 project funded by the World Bank.

The Covid-19 pandemic prevents the consultants from visiting the target countries. In order to implement the three studies, the IOC requests that stakeholders provide information and advice to the consultants and share their views with the consultants on the on the three studies. The consultants may request specific information, or comments on their work through email, through conference calls, or by other means. It is anticipated that the studies will be completed by early 2021, so your timely assistance would be greatly appreciated. Additional details will be made available following review of the inception reports which are currently in preparation. National Focal Points will be fully engaged in the work and can be contacted for further information (see below).

Marine plastic pollution and the circular economy. Preparation of a sensitisation strategy and a communication plan for the reduction of use of plastics to promote circular economy, and to fight against marine pollution. Consultant is Dr. Kieran Kelleher who can be contacted at kkelleherwb@gmail.com. For full details, please check www.commissionoceanindien.org/sw2-y3-c1

Intellectual property rights and innovation in the circular economy. Assessment of national, and regional Intellectual Property rights issues related to innovative projects in the field of circular economy. Consultant is Mr. Coenraad Bezuidenhout who can be contacted at founder@mavericksv.com. For more details, please check...www.commissionoceanindien.org/sw2-y3-c1

Frameworks for enterprise and innovation in the circular economy. Establishment of national, and regional frameworks for the emergence of enterprises and innovative projects to promote circular economy and reduce marine pollution. Consultant is Dr. Pierre Failler who can be contacted at pierre.failler@port.ac.uk. For more details, please check www.commissionoceanindien.org/sw2-y3-c1.

Stakeholders are requested to copy by email any inputs provided to the consultants to their AIODIS National Focal Point (NFP) of the respective countries.

The three terms of reference are below:

¹ Cape Verde, Comoros, Guinea Bissau, Madagascar, Maldives, Mauritius, São Tomé and Príncipe, Seychelles.

Promotion of African & Indian Ocean Island Developing States Blue Economy through the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2)

Terms of reference for the recruitment of an individual consultant the establishment of national, and regional frameworks in the African and Indian Ocean Developing Island States (AIODIS) for the emergence of enterprises and innovative projects to promote circular economy and reduce marine pollution.

Assignment title	Consultancy on (i) Preparation of AIODIS frameworks through the identification of existing initiatives, lessons as well as bottlenecks for the emergence of entrepreneurs in favour of circular economy (ii) Preparation of guide for circular economy
Contract duration	100 person days over 6 months (May – October 2020)
Primary assignment location	African and Indian Ocean Developing Island States (Cabo Verde, Guinea Bissau, São Tomé & Príncipe, Comoros, Mauritius, Madagascar, Maldives and Seychelles)
Financed by	IDA

Mauritius, March 2020

1. Background

A Financing Agreement (Grant No. D1720) was signed between the International Development Association (IDA) and the Indian Ocean Commission (IOC) on the 30th May 2017 to support the Second South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2).

This consultancy is in the context of the implementation of the subcomponent of the project that supports the African and Indian Ocean Developing Island States (AIODIS).

The AIODIS sub-component of SWIOFish2

The sub-component will support the group of African and Indian Ocean Island Developing States (Cabo Verde, Guinea Bissau, São Tomé & Príncipe, Comoros, Mauritius, Madagascar, Maldives and Seychelles) in collaborating and sharing their own experiences to address some of their specific challenges such as improving the sustainable management of their vast maritime territory; innovating and developing their Blue Economy in the context of climate change; and collaboratively mobilizing financing for addressing those challenges. Activities include the organization of high-level meetings to discuss specific challenges and issues of regional interest; the creation and exchange of knowledge; the provision of a preparation facility for project proposal; and support to the AIODIS Secretariat to be hosted by the IOC.

2. Context of the assignment

The African and Indian Ocean Island Developing States (AIODIS) are richly endowed with vast Economic Exclusive Zones (EEZ). The AIODIS have jurisdiction over a significant marine area of about 7 million km², with a long coastline of about 15 000 km, multiple maritime boundaries and complex international and national legal frameworks. The ocean therefore plays a major role given, its economic, social, environmental and geopolitical interests.

The diverse components that make up the Blue Economy are highlighted in table below.

Type of Activity	Activity Subcategories	Related Industries/ Sectors	Drivers of Growth
Harvesting and trade of marine living resources	Seafood harvesting	Fisheries (primary fish production)	Demand for food and nutrition, especially protein
		Secondary fisheries and related activities (e.g., processing, net and gear making, ice production and supply, boat construction and maintenance, manufacturing of fish-processing equipment, packaging, marketing and distribution)	Demand for food and nutrition, especially protein
		Trade of seafood products	Demand for food and nutrition, especially protein
		Trade of non-edible seafood products	Demand for cosmetic, pet, and pharmaceutical products
		Aquaculture	Demand for food and nutrition, especially protein
	Use of marine living resources for pharmaceutical products and	Marine biotechnology and bioprospecting	R&D and usage for health care, cosmetic, enzyme,

Type of Activity	Activity Subcategories	Related Industries/ Sectors	Drivers of Growth
	chemical applications		nutraceutical, and other industries
Extraction and use of marine non-living resources (non-renewable)	Extraction of minerals	(Seabed) mining	Demand for minerals
	Extraction of energy sources	Oil and gas	Demand for (alternative) energy sources
	Freshwater generation	Desalination	Demand for freshwater
Use of renewable non-exhaustible natural forces (wind, wave, and tidal energy)	Generation of (off-shore) renewable energy	Renewables	Demand for (alternative) energy sources
Commerce and trade in and around the oceans	Transport and trade	Shipping and shipbuilding	
		Maritime transport	Growth in seaborne trade; transport demand;
		Ports and related services	maritime transport industries (shipbuilding, scrapping, registration, seafaring, port operations, etc.)
	Coastal development	National planning ministries and departments, private sector	Coastal urbanization, national regulations
	Tourism and recreation	National tourism authorities, private sector, other relevant sectors	Global growth of tourism
Indirect contribution to economic activities and environments	Carbon sequestration	Blue carbon	Climate mitigation
	Coastal Protection	Habitat protection, restoration	Resilient growth
	Waste Disposal for land-based industry	Assimilation of nutrients, solid waste	Wastewater Management
	Existence of biodiversity	Protection of species, habitats	Conservation

Source: World Bank and United Nations Department of Economic and Social Affairs. 2017. *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*. World Bank, Washington DC.

These components have the potential to generate substantial direct and indirect income and employment opportunities to the population of the AIODIS. Except for tourism and fishing activities, the AIODIS have insufficiently developed other components. The current limited capacity prevents these AODIS from maximising opportunities in the other sectors. Moreover, while resources represent

a formidable opportunity of growth and development, if not well managed, they can lead to critical challenges, with serious consequences on the lives of millions of people who depend on coastal areas.

The AIODIS component of the SWIOFish2 project aims to support the development of the Blue Economy by providing opportunities for south-south exchange and increased access to needed expertise for the formulation of actions for the purpose.

The development of economic sectors must happen in healthy oceans, where marine pollution is prevented. Transition to a more circular economy is at the cornerstone of preventing pollutants, including marine plastic litter, to reach the oceans, by addressing the problem at the very source. The Indian Ocean Commission, as an intergovernmental organization supporting its member states as well as the Small Island Developing States (SIDS) of the Atlantic in their march towards sustainable development, proposes to collaborate with the authorities on the one hand to improve the business environment for the emergence of the circular economy and on the other hand to establish a process for the promotion of innovation and entrepreneurship on the issues and perspectives of the circular economy within the framework of the AIODIS with focus on marine pollution. Better use of resources and change from a linear model to a more circular one and a change of perception from waste to value will help combat land-based sources and marine sources of pollution that ends up in the sea and also help create employment opportunities and reduces poverty . This will enable entrepreneurs in the AIODIS to move towards a circular economy that responds to both environmental and economic problems.

2.1. Circular economy in island states

The recent years have seen an increasing awareness on the need to move from an economy based on extraction and consumption to one of regeneration and restoration, which has become an increasing priority for policymakers around the world.

The geographical remoteness of islands, and in most cases their small size, represent an obstacle to the sourcing of raw materials, which is due to limited resources, and outlets for finished products, which is due to limited local demand. These represent a major challenge to the adoption of a circular economy. The AIODIS also face challenges of waste management, including limited landfill capacity and the lack of economies of scale for waste collection, treatment and/or recycling processes. Many of the AIODIS countries also have limited financial resources for waste management infrastructure. Transitioning towards a circular economy model in the various sectors of the Blue Economy will considerably contribute in reducing waste generated by those sectors. For example, adopting a circular model in the tourism and recreation sector, which is an important economic sector generating increased amounts of waste in the AIODIS, is a perfect example of how Circular Economy would in turn help reduce waste in that particular sector.

3. Objectives of the Consultancy

The overall objectives of the consultancy are:

- A. To support the establishment of national, and if feasible, an AIODIS framework for the emergence of enterprises and innovative projects for the promotion of circular economy.
- B. To develop a generic guide for AIODIS entrepreneurs for circular economy.

The specific objectives of this consultancy are as follows:

- A. To establish national, and if feasible an AIODIS regional framework for the emergence of enterprises and innovative projects to promote circular economy with a focus on the reduction of marine pollution.**

The specific tasks of this part are:

- i) To undertake a literature review of best and worse practices worldwide on developing national frameworks for the promotion of circular economy that can be the subject of lessons and adaptation in the AIODIS.
- ii) To conduct a review/ scoping exercise of existing policies, regulations, standards and instruments, related to circular economy in countries that are champions in the area. The exercise should also include policies related to eco-entrepreneurship and eco-innovation, particularly by SMEs.
- iii) To conduct a stakeholder mapping along the plastic value chain
- iv) To map gaps in knowledge, institutional and regulatory barriers and other bottlenecks, both from the demand and supply perspectives, the organisation of waste management, formal versus informal sectors, how the collections are organised and sectors structured, maintenance and green products, in the AIODIS countries that are refraining circular economy from developing.
- v) To propose measures that can be adapted in the AIODIS countries to support emergent enterprises that could be the driving force for circular economy.
- vi) Undertake an analysis on a lifecycle approach to plastics, identify areas of innovation, in particular, on the upstream part where innovation could be possible for new design material, new plastics and alternatives to single-used plastics, then innovation spread until the end of life and disposal of waste, with new recycling technologies in between to keep plastics in the value chain.
- vii) To propose instruments, including fiscal instruments and other economic incentives and disincentives to discourage landfill and propose alternatives, develop measures to promote stimulate industrial symbiosis, to encourage producers to put greener products on the market and to support recovery and recycling schemes.
- viii) To design a cohesive framework for triggering circular economy practices in the AIODIS to enhance the role of eco-innovation to achieve the transition to a circular economy.
- ix) To provide implementation guidelines for development of key policies, economic and fiscal instruments and capacity building measures necessary to enable investments in circular economy, the re-orientation of markets and the reshaping of business strategies and operations at national level towards building feasible regional circular economy. AIODIS being the only platform of African Island States can constitute as one of the major drivers for promoting circular economy though the Island States are far away from each other into two distinct groups (Western Indian Ocean and Atlantic).
- x) To analyse the current sources of domestic and foreign, public and private funding and investment opportunities in the AIODIS for the promotion of circular economy activities,
- xi) To make recommendations to promote circular economy through higher education, research, development, and demonstration.
- xii) To make propositions to expand access to financing (including innovative methods such as crowdfunding) for entrepreneurs running circular business models, and for research
- xiii) To propose mechanisms for networking of circular economy stakeholders, including entrepreneurs and researchers..
- xiv) To develop a coherent strategy on plastics management based on the principles of a circular economy, in order to significantly reduce marine litter, that can be adapted by AIODIS countries, which are unfortunately not at the same level of advancement in their fight against plastic pollution.

B. To develop of a generic guide for entrepreneurs for starting and growing a business in circular economy or integrating circular economy concepts in an existing business to be adapted to AIODIS countries.

The specific tasks of this part are as follows:

- (i) To undertake a literature review on guidelines for the entrepreneurs involved in circular economy.

- (ii) Create a white paper: "the guide of the Entrepreneur for circular economy" with good practices and steps to follow.
- (iii) The guide should facilitate AIODIS entrepreneurs' access to laws, and procedures obtaining business permit and patent for innovations.

The consultant will also act as Resource Person during the regional validation workshop to be held towards the end of the contract period.

4. Deliverables

The main deliverables of the consultancy are:

- i) Inception Report, including a programme of work and methodology to be used.
- ii) A draft report, including the scoping exercise, policy and best practices review as well as an assessment of the business environment in circular economy champion countries, and recommendations for development of circular economy, and generic guide for entrepreneurs.
- iii) Report of the regional validation workshop
- iv) A white paper: "the guide of the Entrepreneur for circular economy"
- v) Final Report, including an Executive Summary at the end of the assignment, in which the comments from participants of the validation workshop and other stakeholders on the above draft report have been incorporated.

5. Duration

The level of effort required for the completion of the tasks should not exceed a total of hundred (100) person days, including travel in the AIODIS, over a period of six months. The assignment is expected to start in May 2020 and be completed by September 2020.

Activity	Timing / Deadline
Advert for post	March 2020
Evaluation	April 2020
Start of contract	May 2020
Validation workshop	October 2020
Submission of final report. End of contract	October 2020

6. Supervision Responsibility

The consultant shall report to the Officer in Charge for AIODIS via the SWIOFISH2 Coordinator based at the Indian Ocean Commission, throughout the duration of the project and shall maintain constant liaison with them to discuss on matters pertaining to progress of works as well as for eventual claims for payment.

the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2)

Terms of reference for the recruitment of an individual consultant for the assessment of national, and regional Intellectual Property rights issues related to innovative projects in the field of circular economy in the African and Indian Ocean Developing Island States (AIODIS)

Assignment title	Consultancy on Assessment of Intellectual Property issues related to innovative projects in the field of circular economy in the African and Indian Ocean Developing Island States (AIODIS)
Contract duration	75 person days over 5 months (June – October 2020))
Primary assignment location	African and Indian Ocean Developing Island States (Cabo Verde, Guinea Bissau, São Tomé & Príncipe, Comoros, Mauritius, Madagascar, Maldives and Seychelles)
Financed by	IDA

7. Background

A Financing Agreement (Grant No. D1720) was signed between the International Development Association (IDA) and the Indian Ocean Commission (IOC) on the 30th May 2017 to support the Second South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2).

This consultancy is in the context of the implementation of the subcomponent of the project that supports the African and Indian Ocean Developing Island States (AIODIS).

The AIODIS sub-component of SWIOFish2

The sub-component will support the group of African and Indian Ocean Island Developing States (Cabo Verde, Guinea Bissau, São Tomé & Príncipe, Comoros, Mauritius, Madagascar, Maldives and Seychelles) in collaborating and sharing their own experiences to address some of their specific challenges such as improving the sustainable management of their vast maritime territory; innovating and developing their Blue Economy in the context of climate change; and collaboratively mobilizing financing for addressing those challenges. Activities include the organization of high-level meetings to discuss specific challenges and issues of regional interest; the creation and exchange of knowledge; the provision of a preparation facility for project proposal; and support to the AIODIS Secretariat to be hosted by the IOC.

The relationship between Circular Economy (CE) and Intellectual Property (IP) is complex. The CE paradigm has changed the perception of economic growth which implies that new growth opportunities are more important than growth levels. The adequate usage of IP is essential for unlocking innovation and accelerating diffusion processes, thereby facilitating sustainability transitions on a global scale. IP can both support and limit CE.

Research and innovation are essential components of circular economy, which create value through the cascading use, reuse and recycling of resources. Implementing CE involves innovation that leads to revisiting classical business models. Entrepreneurs and researchers in the AIODIS need to be provided with an adequate framework that would not only protect their innovative ideas while encouraging the diffusion process.

Innovation as a constraint to circular economy: One of the reasons customers desire new products is that these incorporate improved technologies and designs. Even if a product, such as a washing machine, is designed to be updated with new sensors and software in the foreseeable future, major technological advances are rarely foreseeable. Older products become less attractive due to technological speed. Locking in product lifecycles would restrict the introduction of substantially improved, disruptive technologies and decrease the competitive market forces that drive their development.

Quite a few products used nowadays may be replaced by distinctly different solutions long before their specially designed, extended-life versions are meant to be recycled. (Will the current smart phones or tablets still be necessary five years from now?)

The technological barriers include, among others, the limited attention for end-of-life-phase in current product designs, limited availability and quality of recycling material, new challenges to separate the bio- from the techno cycle and linear technologies are deeply rooted.

IP as a constraint to promotion of circular economy: Obstacles for a transition to a circular economy lie in fragmented knowledge management: the lack of an information exchange system, the lack of coherent training and skill development and the lack of knowledge within businesses, and the poor dissemination of that knowledge amongst stakeholders. Also, there is limited information and know-how to stimulate an increase in co-operation in the supply chain. And that's how something like Intellectual Property can strangle the circular economy. Information and innovation are the currency of circularity but sharing either with

independent businesses is not something that manufacturers have been willing to do. It is common practice for well established companies not to release their internal service manuals or sell replacement parts to the public, to independent repair technicians, or to unaffiliated recyclers and refurbishers, even though that information would certainly help to close the loop. Likewise, in 2012, Nikon USA stopped selling replacement parts to camera repair shops that weren't inside their circle of "authorised" repairers. Their decision to do so has impacted countless small businesses, stifled competition, and given Nikon a monopoly over the aftermarket of their products. Such a situation has become widespread in all spheres of business.

Those policies might seem good for manufacturers in the short run but building walls around products — around Intellectual Property — is self-defeating. Apple could make hundreds of millions if it sold replacement parts to the public, just as BMW could certainly find a wider market for their proprietary tools. And, as the price of raw materials continues to skyrocket, working hand in hand with the small businesses that already process their products just might mean manufacturers would be able to reclaim the materials they need for remanufacturing.

Addressing market failure with respect to IP and promotion of circular economy: Imagine how much more manufacturers could accomplish if they worked with the open market, instead of against it. The market opportunity is immense in providing tools and services to the thousands of small businesses that specialise in reuse, refurbishment, repair, and recycling. An inclusive ecosystem is the best shot we have at closing the loop. Without them, we will not reach the economies of scale that the circular economy needs.

For the transition towards circular economy, it is critical that new breakthroughs in materials and product design rapidly find their way into the mass market. To optimize global supply chains, smart infrastructure and tracking technology will need to spread across the emerging economies and other developing countries. In a world with sustained, high resource prices, the management of resource flows is likely to increase the importance of protecting Intellectual Property related to resource efficiency. In addition, practical arrangements will be needed for the shared Intellectual Property arising from multi-partner activities.

Developing countries should be encouraged to design their IP systems that developed countries enjoyed in earlier stages of their own development. The imposition of IP standards on the developing countries such as the AIODIS and the impact of IP standards on development should be assessed. It should be ensured that the global IP systems evolve so that they contribute to growth of the developing countries, by stimulating innovation and technology transfer relevant to them, while also making available the products of technology at the most competitive prices possible. Instead of hindering, IP system should facilitate the application of progress in science and technology for the benefit of the developing world.

As the price of raw materials continues to increase, it is imperative to create an environment where large companies are encouraged to work hand in hand with the small businesses that already process their products and recycle their wastes. Compelling companies to take back the used products as it has been initiated in UK can constitute such a strategy.

Large manufacturers could accomplish more if they worked with a sufficiently open market, instead of against it. The market opportunity is immense in providing tools and services to small businesses that specialise in reuse, refurbishment, repair, and recycling.

As the sharing economy is progressing, IPRs are in a constant state of evolution. Technology, platforms and legal frameworks are evolving to enable businesses to share innovations while still retaining the value of their underlying IP.

One important factor to remember is that the AIODIS are not a homogenous group, and there are significant differences among this group of eight islands. These islands vary greatly in size, natural resource endowment, economic structures, levels of socioeconomic and technological development, and cultures and political systems. The diversity among the islands raises questions about their

belonging to a group when addressing policy issues. Nevertheless, there are certain key socioeconomic and geopolitical characteristics that unify this group of islands. These include their small size (Madagascar being a very small economy), their high vulnerability to external factors and their difficulty in achieving economies of scale. These common characteristics are especially relevant for a discussion on IPR and circular economy.

8. Objective of the Consultancy

The objective of this consultancy is to assess the Intellectual Property issues related to innovative projects in the field of circular economy in the AIODIS.

The specific tasks of the consultancy are:

- i) To undertake a review of relevant best practices with respect to innovation and IP worldwide in the field of circular economy
- ii) To map out the current level of innovation and IP related to circular economy and conduct a SWOT analysis in the AIODIS, mapping the underlying factors such as funding and regulatory and institutional frameworks in the AIODIS
- iii) To identify the barriers to innovation and diffusion in AIODIS
- iv) To make recommendations for establishment of clear IP regulations and measures in the AIODIS countries with a view to promoting circular economy

The consultant will also act as resource person during a validation workshop to be held in September 2020 for the validation of the draft report submitted by the consultant well before the validation workshop to AIODIS.

9. Deliverables

The main deliverables of the consultancy are:

- vi) Inception Report, inclusive of a programme of work and methodology to be used.
- vii) A draft report on specific tasks on the ToR.
- viii) A report of the Validation Workshop
- ix) Final Report, including an Executive Summary at the end of the assignment, in which the comments from participants of the validation workshop and other stakeholders on the above draft report have been incorporated.

10. Duration

The level of effort required for the completion of the tasks should not exceed a total of seventy-five (75) person days, including travel in the AIODIS, over a period of five months. The assignment is expected to start in June 2020 and be completed by October 2020.

Activity	Timing / Deadline
Advert for post	April 2020
Evaluation	May2020
Start of contract	June 2020
Validation workshop	September 2020

Submission of final report.	October 2020
End of contract	

11. Supervision Responsibility

The consultant shall report to the Officer in Charge for AIODIS via the SWIOFISH2 Coordinator based at the Indian Ocean Commission, throughout the duration of the project and shall maintain constant liaison with them to discuss on matters pertaining to progress of works as well as for eventual claims for payment.

The SWIOFISH2 Coordinator will facilitate networking of key experts with the AIODIS National Focal Points in order to ensure that the consultant's mission in the AIODIS is productive.

Promotion of African & Indian Ocean Island Developing States Blue Economy through the South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2)

Terms of reference for consultancy for the preparation of a sensitisation strategy and a communication plan for the reduction of use of plastics to promote circular economy, and to fight against marine pollution, in the AIODIS.

Assignment title	Consultancy for: A. Development of a sensitisation strategy and a communication plan for reduction of plastic pollution towards government authorities, private sector and general public in AIODIS B. Development of a plan for advocacy against plastic pollution in high-level national, regional and international fora
Contract duration	100 person days over 6 months (June - November 2020)
Financed by	IDA

Mauritius, April 2020

12. Background

A Financing Agreement (Grant No. D1720) was signed between the International Development Association (IDA) and the Indian Ocean Commission (IOC) on the 30th May 2017 to support the Second South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish2).

This consultancy is in the context of the implementation of the subcomponent of the project that supports the African and Indian Ocean Developing Island States (AIODIS).

The AIODIS sub-component of SWIOFISH2

The second sub-component will support the group of African and Indian Ocean Island Developing States (Cabo Verde, Guinea Bissau, São Tomé & Príncipe, Comoros, Mauritius, Madagascar, Maldives and Seychelles) in collaborating and sharing their own experiences to address some of their specific challenges such as improving the sustainable management of their vast maritime territory; innovating and developing their blue economy in the context of climate change; and collaboratively mobilizing finance for addressing those challenges. Activities include the organization of high-level meetings to discuss specific challenges and issues of regional interest; the creation and exchange of knowledge; the provision of a preparation facility for project proposal; and a support to the AIODIS Secretariat to be hosted by the IOC.

13. Context of the assignment

The African and Indian Ocean Island Developing States (AIODIS) are richly endowed with vast Economic Exclusive Zones (EEZ). The AIODIS have jurisdiction over a significant marine area of about 7 million km², with a long coastline of about 15 000 km, multiple maritime boundaries and complex international and national legal frameworks. The ocean therefore plays a major role given, its economic, social, environmental and geopolitical interests.

The diverse components that make up the Blue Economy are highlighted in table below.

Type of Activity	Activity Subcategories	Related Industries/ Sectors	Drivers of Growth
Harvesting and trade of marine living resources	Seafood harvesting	Fisheries (primary fish production)	Demand for food and nutrition, especially protein
		Secondary fisheries and related activities (e.g., processing, net and gear making, ice production and supply, boat construction and maintenance, manufacturing of fish-	Demand for food and nutrition, especially protein

Type of Activity	Activity Subcategories	Related Industries/ Sectors	Drivers of Growth
		processing equipment, packaging, marketing and distribution)	
		Trade of seafood products	Demand for food and nutrition, especially protein
		Trade of non-edible seafood products	Demand for cosmetic, pet, and pharmaceutical products
		Aquaculture	Demand for food and nutrition, especially protein
	Use of marine living resources for pharmaceutical products and chemical applications	Marine biotechnology and bioprospecting	R&D and usage for health care, cosmetic, enzyme, nutraceutical, and other industries
Extraction and use of marine non-living resources (non-renewable)	Extraction of minerals	(Seabed) mining	Demand for minerals
	Extraction of energy sources	Oil and gas	Demand for (alternative) energy sources
	Freshwater generation	Desalination	Demand for freshwater
Use of renewable non-exhaustible natural forces (wind, wave, and tidal energy)	Generation of (offshore) renewable energy	Renewables	Demand for (alternative) energy sources
Commerce and	Transport and trade	Shipping and shipbuilding	

Type of Activity	Activity Subcategories	Related Industries/ Sectors	Drivers of Growth
trade in and around the oceans		Maritime transport	Growth in seaborne trade; transport demand; maritime transport industries (shipbuilding, scrapping, registration,
		Ports and related services	seafaring, port operations, etc.)
	Coastal development	National planning ministries and departments, private sector	Coastal urbanization, national regulations
	Tourism and recreation	National tourism authorities, private sector, other relevant sectors	Global growth of tourism
Indirect contribution to economic activities and environments	Carbon sequestration	Blue carbon	Climate mitigation
	Coastal Protection	Habitat protection, restoration	Resilient growth
	Waste Disposal for land-based industry	Assimilation of nutrients, solid waste	Wastewater Management
	Existence of biodiversity	Protection of species, habitats	Conservation

Source: World Bank and United Nations Department of Economic and Social Affairs. 2017. *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*. World Bank, Washington DC.

These components have the potential to generate substantial direct and indirect income and employment opportunities to the population of the AIODIS. Except for tourism and fishing activities, the AIODIS have insufficiently developed other components. The current limited capacity prevents these AODIS from maximising opportunities in the other sectors. Moreover, while resources represent a formidable opportunity of growth and development, if not well managed, they can lead to critical challenges, with serious consequences on the lives of millions of people who depend on coastal areas.

The AIODIS component of the SWIOFish2 project aims to support the development of the Blue Economy by providing opportunities for south-south exchange and increased access to needed expertise for the formulation of actions for the purpose.

The development of economic sectors must happen in healthy oceans, where marine pollution is prevented. Transition to a more circular economy is at the cornerstone of preventing pollutants, including marine plastic litter, to reach the oceans, by addressing the problem at the very source. The Indian Ocean Commission, as an intergovernmental organization supporting its member states as well as the Small Island Developing States (SIDS) of the Atlantic in their march towards sustainable development, proposes to collaborate with the authorities on the one hand to improve the business environment for the emergence of the circular economy and on the other hand to establish a process for the promotion of innovation and entrepreneurship on the issues and perspectives of the circular economy within the framework of the AIODIS with focus on marine pollution. Better use of resources and change from a linear model to a more circular one and a change of perception from waste to value will help combat land-based sources and marine sources of pollution that ends up in the sea and also help create employment opportunities and reduces poverty . This will enable entrepreneurs in the AIODIS to move towards a circular economy that responds to both environmental and economic problems.

13.1. Circular economy in island states

The geographical remoteness of the islands, as well as their small size in most cases, represents an obstacle to the sourcing of raw materials, which is due to limited resources, and outlets for finished products as a result of minimal local demand. These represent a major challenge to the adoption of a circular economy. The AIODIS countries also face challenges for waste management, including limited landfill capacity and the lack of economies of scale for waste collection, treatment and/or recycling processes. Many of the AIODIS countries also have limited financial resources for waste management infrastructure. This can result in the need to export waste to be dealt with elsewhere. A significant economic dependence on tourism leads to the generation of increased amounts of waste in tourist resorts.

13.2. Sensitisation and Communication against marine pollution amongst AIODIS

Every year, 100 million tonnes of waste (out of the 4 billion produced annually) end up at sea, much of it made up of plastic. It is estimated that 8 to 15 million tonnes of plastic are dumped into the oceans each year. As plastic is nowadays extensively used in people's daily lives, plastic pollution at is a real threat for which mankind is solely responsible. Waste that is dumped into rivers, seas or collected by runoff from watersheds will end up in the ocean if it is not recovered upstream. Waste in the form of micro or nanoparticles is found in the environment such as in the soil and ultimately in the ocean given that 80% of marine pollution originates from land.

In recent years, research and awareness initiatives on ocean plastic pollution have continued to grow. However, the scope of these responses is limited at the country level, while the phenomenon has taken on a cross-border dimension. Although individual country-level initiatives do exist, the limited scope of each and insufficient coordination among actors is a limiting factor on overall effectiveness. The impact of plastic pollution on food chains, particularly marine ones, has not yet been sufficiently studied.

Plastics, cause strangulation and asphyxiation and accumulate in living organisms including fish and marine mammals. They also carry endocrine disruptors, mutagens and other pollutants, which represent a threat for biodiversity with a definite impact on human health. Furthermore, marine eddies carry concentrated flows of micro-plastics that are mixed with phytoplankton. This must be considered when assessing the effect of micro-plastics on ecosystem health and human health. The Indian Ocean is not immune to this phenomenon.

From the point of view of recovery of plastic waste and its management, policies are implemented in the territories of the AIODIS, but at different scales. The need to export waste from an island to a recovery centre involves collection, sorting and the first steps of recycling (compaction, grinding, etc.) to limit transport costs. However, inadequate plastic waste management cumulated with lack of public education and awareness results in such waste ending up in the ocean. Waste management requires country-specific adaptation and national coordination to be effective and so remains a rather national issue. This study is rather focussed on public education and awareness.

The fact that marine pollution is increasing over time shows that there is a need to analyse the level of education and sensitisation against plastic marine pollution.

Several studies have shown the need to focus on the youth – the decision makers of tomorrow. The education of the younger generation is the cornerstone of this programme. Marine pollution is already a matter of great concern and there is an urgent need to work with the younger generation in order to achieve lasting behavioural change.

Innovation and support for the development of awareness activities, linked to recycling and the circular economy, should be the immediate response to the daily plastic pollution in the region. The aim is to build on the dynamism of local stakeholders with the support of a specialised operators to encourage the development of economically viable enterprises that offer technical alternatives to plastic materials produced and imported in the AIODIS countries or to offer solutions for the recovery and recycling or export of plastic waste.

14. Objectives of the Consultancy

The aim of the consultancy is to develop a three-pronged Strategy and Action plan to combat marine pollution with a focus on plastic pollution with the following three components:

- A To develop a sensitisation and communication strategy on the reduction of marine plastic pollution and an Action Plan towards:
 - i. Government Authorities
 - ii. Private Sector
 - iii. Non-state actors
- B To develop a plan for improved awareness for reduction of marine plastic pollution by involving education authorities and schools.

A. To develop a sensitisation strategy and a communication plan for

- (i) Government Authorities
- (ii) Private Sector
- (iii) General Public

The specifics of the Communication Strategy on tools/measures that can be taken by Governments to reduce pollution and promote recycling and circular economy are as follows:

i. For Governments

- a. Implement a deposit-refund system for recovery of plastic bottles for recycling;
 - b. Encourage the recycling of accessories and equipment in a circular economy and fight marine pollution from the source;
 - c. Support and promote initiatives to combat the use of single-use plastics;
 - d. Prohibit the use of plastic bottles in official meetings and other public events for the promotion and adoption of an environmental charter;
 - e. Sanction the rejection of any plastic container in nature;
 - f. Awareness of the media on their environmental responsibility and invite them to promote alternatives to plastic products and good practices of circular economy;
 - g. Curricula in schools on the harms of plastic;
 - h. Encourage all public and private institutions to make provision for drinking water for all their staff; especially in schools and public places and take the necessary actions to ensure that tap water is potable (such as storage) and the factors determining the perception of water quality in a transparent manner;
 - j. Apply the 'polluter pays' principle and ensure that the products reflect the actual costs including the costs taking into account the impact on the environment and recover from the industry concerned the full cost of its impact;
 - k. Adopt appropriate policy frameworks and enforcement measures to ensure implementation of above actions and the ones mentioned under (ii) and (iii) below.
- ii. For Private Sector (all spheres of private sector including those in the leisure and catering including intermediary private sector associations)**
- a. Formulation of some framework, policy decision followed by advocating for investment from private sector for non-polluting products;
 - b. Prohibit the use of plastic bottles in meetings and conferences and promote the use of reusable containers with drinking water ;
 - c. Ensure adequate drinking water quality and regular inspection of stored water.
 - d. Invest in greening industrial operations to avoid pollution of the marine environment;
 - e. Reduce plastic packaging of products;
- iii. For General Public**
- a. Adopt a policy for plastic containers such as reusable container for water but also other containers for food and other widely used products such as detergents and personal hygiene;
 - b. Take steps to avoid contamination of drinking water;
 - c. Exercise right to access drinking water in homes, schools, offices, restaurants and any public place.
 - d. Increase demand for products that produce minimal waste.
- B. To develop a plan for improved environmental awareness by involving education authorities and schools**
- a. Assess communication and sensitisation campaigns and educational activities in schools and propose improvements;
 - b. Develop an advocacy plan for improved students' /youth involvement/participation in high-level national, regional and international fora related to environmental issues.
 - c. Recommend channels of communication between young people and government and other decision makers.
 - d. Recommendations on how the youth can engage the private sector, academic institutions, media and civil society.
 - e. Promotion of youth-led organizations in AIODIS to facilitate multi-stakeholder partnerships against marine pollution.
 - f. The establishment of an AIODIS funding mechanism to support youth involvement, including research led by young researchers in the area of circular economy.

15. Scope work

The consultant will be home based, with the possibility to travel to the General Secretariat of the IOC and if necessary, in AIODIS countries to conduct consultation with key stakeholders. The Organisation and methodology to be submitted may make proposals on this.

The IOC will facilitate networking of key experts with the AIODIS National Focal Points in order to ensure that experts' mission in the AIODIS is productive.

16. Deliverables

The main deliverables of the consultancy are:

- (i) Inception Report, inclusive of a programme of work and methodology to be used.
- (ii) A draft report, including the sensitisation strategy and communication plan for government, private sector and general public, and pledge on elimination of single use plastics from premises of UN agencies.
- (iii) Final Report, including an Executive Summary at the end of the assignment, in which the comments received on the draft report are incorporated.

All report will have to be provided in hard as well as soft formats.

17. Duration

The level of effort required for the completion of the tasks should not exceed a total of 100 person days and is expected to start on or about mid-September 2019 and be completed by February 2020.

Activity	Timing / Deadline
Advert for post	May 2020
Evaluation	June 2020
Start of contract	July 2020
End of contract	January 2021

18. Supervision Responsibility

The consultant shall report to the coordinator of the SWIOFISH2 project, based at the IOC, throughout the duration of the project and shall maintain constant liaison with IOC to discuss on matters pertaining to progress of works as well as for eventual claims for payment.