Final Report: COVID-19 impacts and consequent challenges and opportunities for SIDs in implementing the Aichi Biodiversity Actions, the successor Post 2020 Global Biodiversity Framework and management of BBNJ in the Western Indian Ocean (WIO)

NAIROBI CONVENTION

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Disclaimer	Unless specified otherwise the opinions expressed in this "*Final Report*" are entirely those of the author and should not be viewed as those of UNEP-Nairobi Convention and WIOMSA.

Executive Summary

The COVID-19 pandemic has significantly impacted lives, livelihoods, economic growth and altered patterns of international economic interaction. The macroeconomic effects may not be temporary but could disproportionately shift long-term development pathways, particularly in small island development states and other low- and middle-income countries, offsetting gains made towards achieving the Sustainable Development Goals (SDGs) in recent decades. The objective of the consultancy was to document the impacts of the COVID-19 pandemic on the Western Indian Ocean (WIO) Small Island Developing States (SIDS) and their biodiversity (including the impact on the contribution of biodiversity to economy, livelihoods, society and culture). The report reviews the pandemic's implications on the achievement of the Aichi Biodiversity Targets, the SAMOA Pathway, and SIDS engagement in the Post-2020 Global Biodiversity Framework and negotiations of the international legally binding instrument under UNCLOS on Biodiversity in areas Beyond National Jurisdiction (BBNJ). Recommended actions for mitigating the impacts of the COVID-19 pandemic to build back better through enhanced biodiversity conservation and implementation of the Global Biodiversity Framework and Agenda 2030 are provided.

Acronyms

BBNJ	Biodiversity in areas Beyond National Jurisdiction
BIP	Biodiversity Indicators Partnership
CBD	Convention on Biological Diversity
CEESP	Commission on Environmental, Economic and Social Policy
COP	Conference of the Parties
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GEF	Global Environment Facility
IUCN	International Union for the Conservation of Nature
MEA	Multilateral Environmental Agreement
NFP	National Focal Points
OACPS	Organisation of African, Caribbean and Pacific States
OEWG	Open-Ended Intersessional Working Group
SAMOA	SIDS Accelerated Modalities of Action
SBI	Subsidiary Body on Implementation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
UN	United Nations
UNCLOS	United Nations Convention for the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
UNWTO	United Nations World Tourism Organization
WIO	Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association

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CHAPTER 1. Introduction

1.1 Preamble

The objective of the consultancy is to document the impacts of the COVID-19 pandemic on the Western Indian Ocean (WIO) Small Island Developing States (SIDS) and their biodiversity (including the impact on the contribution of biodiversity to economy, livelihoods, society and culture). The report will review the pandemic's implications on the achievement of the Aichi Biodiversity Targets, the SAMOA Pathway, and SIDS engagement in the Post-2020 Global Biodiversity Framework and negotiations of the international legally binding instrument under UNCLOS on Biodiversity in areas Beyond National Jurisdiction (BBNJ). The assignment will propose recommendations on mitigating the impacts of the COVID-19 pandemic to build back better through enhanced biodiversity conservation and implementation of the Global Biodiversity Framework and Agenda 2030.

The purpose of the report is intended to aid the Nairobi Convention Secretariat in the development of a strategy for SIDS to overcome the current shock and progress on a path to sustainable development.

1.2 COVID-19 Pandemic

On 31st December 2019, the World Health Organisation (WHO) was alerted to the appearance of several cases of pneumonia in Wuhan city, Hubei Province in China. On 7th January 2020, the Chinese authorities isolated a new virus from these patients, which was named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which causes the associated disease COVID-19.

The WHO declared COVID-19 as a public health emergency of international concern on 30th January 2020. On 11th March 2020, the Director-General of the WHO announced that COVID-19 was to be characterized as a pandemic due to the rapid increase in the number of cases across a growing number of countries. The WHO emphasised the need for countries to take measures to contain the spread of the virus. In response, many countries introduced controls to restrict the internal movement of people and some countries closed their borders entirely.

The COVID-19 pandemic and the restrictions put in place to control the spread of the virus significantly impacted the global economy. Among the sectors that were disproportionately affected by the access and control measures are those that are also important components of the ocean economy (e.g., tourism, fisheries, aquaculture, ports and shipping). Many SIDS are particularly reliant upon these economic sectors and are therefore likely to have experienced a significant economic shock as a result[1].

[1] OECD (2021) COVID-19 pandemic: Towards a blue recovery in small island developing states. OECD Policy Responses to Coronavirus (COVID-19). January 2021. https://www.oecd.org/coronavirus/policy-responses/covid-19-pandemic-towards-a-blue-recovery-in-small-island-developing-states-241271b7/

1.3 Global Recognition of the Unique Situation for SIDS

Small Island Developing States (SIDS)[2] are a unique and particularly vulnerable group of countries due to their small land area, population size, remoteness and insularity, heavy reliance upon a limited and often narrow range of natural resources, high dependency on imports and on global markets, all of which leaves them exposed to external economic shocks, and global environmental challenges including climate change related impacts and natural disasters. These collective structural and external challenges present a constraint to their sustainable development.

The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) recognises 58 SIDS as a distinct group of developing countries facing specific social, economic and environmental vulnerabilities. The SIDS recognised by UN-OHRLLS are distributed across the Caribbean, the Pacific and the Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS) (Figure 1-1). Of these, 38 are United Nations (UN) members and 20 are non-UN Members or Associate Members of the Regional Commissions.

The United Nations first recognized SIDS as a distinct group at the Conference on Environment and Development held in Rio de Janeiro, Brazil in 1992. In 1994 the first United Nations Global Conference on the Sustainable Development of Small Island Developing States was held in Bridgetown, Barbados. The Conference adopted the Barbados Programme of Action for the Sustainable Development of Small Island Developing States (BPoA) which translated Agenda 21 into 14 SIDS specific priority areas[3] and identified the actions needed at the national, regional and international level, including cross-cutting actions[4].

In 2005, the Mauritius Strategy for Further Implementation of the Programme of Action for Sustainable Development of Small Island Developing States (MSI) was adopted, which identified further critical areas in the BPoA and new emerging issues[5]. The MSI covered 20 thematic chapters for the period 2005 to 2015 building upon the priority areas of the BPoA[6]. The MSI placed increased emphasis on the social and economic dimensions for the BPoA on health, culture, knowledge management, education for sustainable development, consumption and production. It also emphasized the importance of trade and trade liberalization for SIDS and highlighted the graduation from least developed country status[7].

[2] A number of lists defining SIDS exist, including those established by: (i) the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) comprising 58 SIDS; (ii) the Alliance of Small Island States, comprising 39 SIDS; and (iii) the UN Conference on Trade and Development, comprising 29 SIDS. The World Bank Group defines small states as countries that: (a) have a population of 1.5 million or less; or (b) are members of the World Bank Group Small States Forum. The OECD recognises 33 SIDS that are currently (2020) eligible for official development assistance (ODA).

[3] Priority areas include; climate change and sea- level rise; natural and environmental disasters; management of wastes; coastal and marine resources; freshwater resources; land resources; energy resources; tourism resources; biodiversity resources; national institutions and administrative capacity; regional institutions and technical cooperation; transport and communication; science and technology; human resource development

[4] e.g., capacity-building, institutional development at national, regional and international levels, cooperative transfer of environmentally sound technologies; trade and economic diversification

[5] Boto and Biasca, 2012

[6] e.g. financial and other relevant resources, improved trade opportunities, education and awareness-raising, and national strategies for sustainable development, including poverty reduction and resilience-building

[7] United Nations, 2005

Figure 1-1 Map of formerly recognised Small Island Developing States (SIDS).

In 2010, the MSI +5 Review consisted of several regional meetings and two interregional meetings. The last meeting adopted a political declaration that elaborated new and renewed commitments to implement BPoA and MSI.

SIDS' unique and particular vulnerabilities was further highlighted in "The Future We Want", adopted at The United Nations Conference on Sustainable Development (also known as Rio+20) that took place in Rio de Janeiro, Brazil in June 2012.

In 2014, the Third International Conference on SIDS held in Apia, Samoa entitled "The sustainable development of small island developing States through genuine and durable partnerships" resulted in the SIDS Accelerated Modalities of Action (SAMOA) Pathway (Samoa Pathway) called for urgent actions and support for SIDS' efforts to achieve their sustainable development via the five priority areas:

1. Promote sustained and sustainable, inclusive and equitable economic growth with decent work for all, sustainable consumption and production and sustainable transportation
2. Act to mitigate climate change and adapt to its impacts by implementing sustainable energy and disaster risk reduction programs
3. Protect the biodiversity of SIDS and care for environmental health by mitigating the impact of invasive plant and animal species and by properly managing chemicals and water, including hazardous waste, as well as protecting oceans and seas
4. Improve human health and social development through food security and nutrition, improved water and sanitation, reducing the incidence of non-communicable disease and by promoting gender equity and women's empowerment
5. Foster partnership among SIDS, UN Agencies, development partners and others to achieve these goals.

UN-Department of Economic and Social Affairs (DESA)[8] leads the inter-agency coordination within the United Nations system through the Executive Committee of Economic and Social Affairs Plus (ECESA Plus), and among UN and non-UN entities active on SIDS issues through the Inter-Agency

[8] https://sustainabledevelopment.un.org/topics/sids

Consultative Group (IACG) on SIDS[9], to monitor the implementation of the BPOA, MSI, and the Samoa Pathway, and progress being made in the SIDS partnerships. UN-DESA has a specialist SIDS Unit to provide technical assistance and advice and supports for intergovernmental processes and reports on progress made in the implementation of the BPOA, MSI, and the Samoa Pathway.

Early into the pandemic, UN-DESA prepared a briefing note[10] that examined the potential disproportionate impact of the COVID-19 on SIDS. The briefing highlighted concerns with regards health capacities and impacts to the economy. The number of COVID-19 related deaths per 100,000 people was initially found to be higher in SIDS compared to other developing country groups and regions, including least developed countries (LDCs) and landlocked developing countries (LLDCs) (see Figure 1-2). The UN-DESA briefing projected that the pandemic would likely cause SIDS economies to enter severe recession due to falling remittances and capital flows, disappearing tourism revenues, shrinking external borrowing options, as well as high debt servicing costings, high reliance on food imports ad low domestic saving. Since then, SIDS globally have in fact demonstrated lower COVID related deaths due to international border closures and other measures put in place to control the spread of the virus.

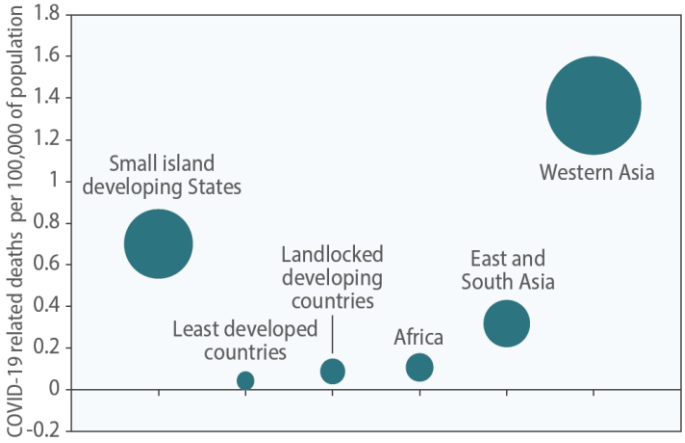


Figure 1-2 COVID-19 related deaths in selected country groups and regions as of 28th April 2020 (SOURCE: UN DESA calculations based on John Hopkins University). The size of the bubbles represents reported COVID-19 related deaths per 100,000 people.

[9] http://unohrlls.org/about-sids/
[10] https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-64-the-covid-19-pandemic-puts-small-island-developing-economies-in-dire-straits/

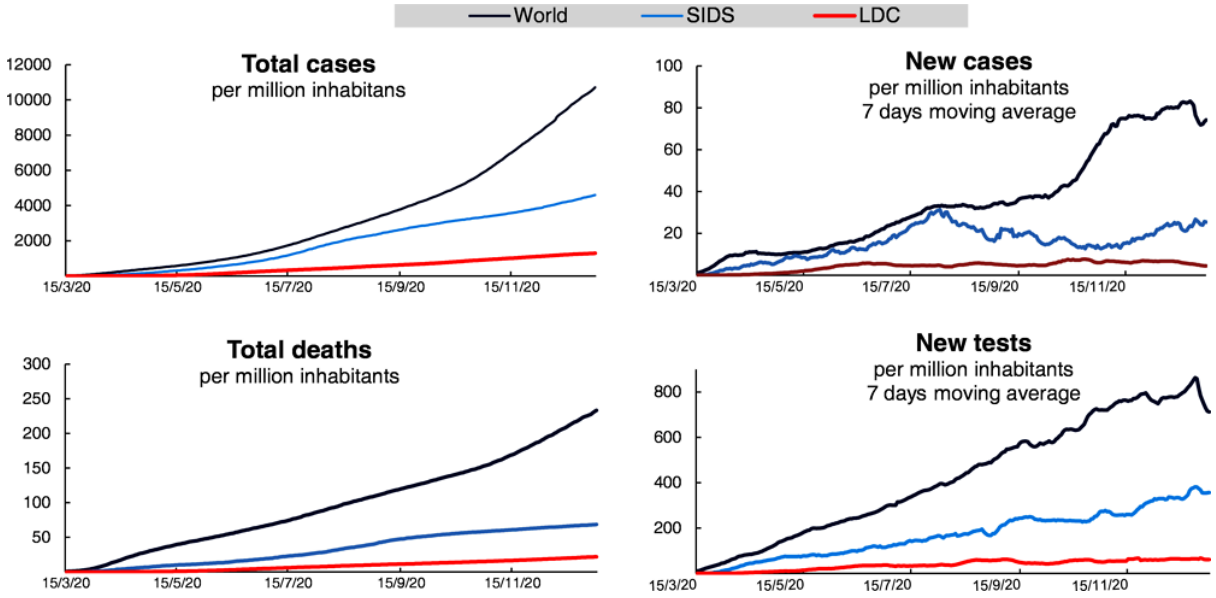


Figure 1-3 Relative to their population, SIDS have had fewer COVID-19 cases and deaths than the world average. Note: The SIDS category used for this chart includes only ODA-eligible SIDS. Data comprise the period March 15, 2020 – December 31, 2020. Source: Our World in Data (2020), Coronavirus Pandemic (COVID-19), https://ourworldindata.org/coronavirus.

1.4 Western Indian Ocean Small Island Developing States

The Western Indian Ocean (WIO) region hosts more than 354 islands and islets within the territories of African countries (Comoros, Madagascar, Mauritius, Mozambique, Seychelles, Tanzania, Somalia and South Africa) and France, which include three formally recognised SIDS (Comoros, Mauritius and Seychelles)[11,12,13] (Figure 1-1).

The formally recognised SIDS in the WIO region (Comoros, Mauritius, and Seychelles), together with Madagascar, an island state, are the focus of the current study, and hereafter referred to as the WIO-islands. This group of islands have distinct physical geographies and unique biogeography's characterised by high levels of endemism. The human geographies, social, political, cultural and ethical characteristics and economies are also very diverse.

Despite the differences, the WIO-islands are connected by an undivided marine realm, and they share the common challenge of managing the wealth associated with this vast resource. Collectively, these four nations are responsible for around 5 million square kilometres (km^2) of the Indian Ocean marine realm, and the resident populations are heavily dependent upon ocean derived goods and services.

The WIO-islands also share common environmental vulnerabilities, and all are susceptible to and have been impacted by natural and man-made disasters. The 1997-1998 global mass bleaching event, which devastated many of the coral reefs in the wider WIO region was a stark awakening to the magnitude of the potential future impact of global climate change. Increasing seawater temperatures, rising sea levels, unpredictable seasonal weather and extreme events all present significant threats to these islands.

[11] https://sustainabledevelopment.un.org/topics/sids/list
[12] http://unohrlls.org/about-sids/country-profiles/
[13] https://www.aosis.org/about/member-states/

The global COVID-19 pandemic has also exposed and amplified other vulnerabilities, which the present study will explore.

Table 1-1 Key characteristics of WIO-islands.

	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
Land area	1,861.00	587,041	2,030.00	460.00
Arable land	35.50	5.16	36.90	0.00
Forest areas	18.00	21.60	19.00	0.73
Coastal length	469.00	4,828.00	496.00	747.00
EEZ	164,643.00	1,385,355.10	2,385,941.20	1,748,474.80
Nearest neighbour	919	919	1057	1343
Population 2019	850,890	26,969,310	1,265,710	97,630
Population density (2018) -people per km^2	45	623	447	210
Population growth rate 2018	2.16	2.63	0.15	0.59
GDP per capita 2019	1,362.42	539.95	11,090.43	16,389.26
GDP per capita 2020	1,361.86	501.76	8,993.48	11,638.72
Productive capacity Index (2018)	24.6	22.1	37.4	35.7
Economic and environmental vulnerability index (2019)	37.65	34.81	22.42	40.48
GNI (2021)	1,367	496	10,977	15,477
Consumer Price Index growth	1.4		1.9	2.30%
Unemployment rate (2019)	8.1		6.3	3%
Unemployment rate F (2019)	10.4		9.7	2.7
Unemployment rate M (2019)	6.7		4.1	3.2
Public debt as % of GDP (2018)			25.2	9.4
Remittances (2019)	168,678,988	407,676,204	318,511,666	23,648,219
	LDC	LDC	ODA	ODA
World Bank Classification	Lower middle income	Low income	High income	High income
	IDA	IDA	IBRD	IBRD
	HIPC	HIPC		

1.5 The Nairobi Convention

All the WIO-islands are party to the Nairobi Convention. The workplan of the Nairobi Convention is addressed through a combination of projects and programmes executed by the Convention Secretariat, working with signatory states and other partners in respective countries.

The following projects and programmes are currently being implemented:

- **Implementation of the Strategic Action Programme for the Protection of the Western Indian Ocean from Land-Based Sources and Activities (WIOSAP) Project**, whose goal is to reduce impacts from land-based sources of pollution on the WIO and sustainably manage coastal and river ecosystems. Major outputs to date include the start of 15 national level demonstration projects on managing critical habitats, improving water quality, or managing environmental river flows; ecosystem guidelines and toolkits on seagrass restoration, mangrove restoration, and environmental flows; Outlooks on Marine Protected Areas and Critical

Habitats; and capacity building on marine spatial planning, leadership, and good governance. 2016-2021. Financed by the Global Environment Facility (GEF): USD 10,867,000

- **The Western Indian Ocean Large Marine Ecosystems Strategic Action Programme Policy Harmonisation and Institutional Reforms Project (SAPPHIRE) Project**, whose goal is to achieve effective, long-term ecosystem management in the WIO Large Marine Ecosystems. Major outputs to date include national project inception and scoping workshops, convening of science to policy forums; calls for proposals for demonstration projects on a) policy harmonization and institutional reform and b) community engagement in sustainable resources management; strengthening partnerships for oceanographic research in the North Kenya bank and Pemba channel of Tanzania, and strengthening of a regional network of data managers to coordinate partnerships on oceanographic data and research; assessment reports on the state of oceanographic data and ocean governance in the region; support to countries to begin the updating of their Marine Ecosystem Diagnostic Analyses; regional consultations on ocean governance and enhancing the leadership capacity of Marine Scientists and Officials; and national capacity strengthening on MSP for improved ocean governance in the WIO. 2017-2023. Financed by GEF: $8,766,500; Governments: $311,040,044; In-kind: $6,759,450
- **Partnership Project on African, Caribbean, and Pacific (ACP) Countries Capacity Building of Multilateral Environmental Agreements (MEAs),** whose goal is to improve international environmental governance and better management of coasts and oceans through support to four Regional Seas Programmes (Nairobi, Cartagena, Abidjan, and Noumea Conventions) 2020-2023. Financed by European Union: $2,022,310 (to NC). Major project activities expected to begin in 2020.
- **Partnership Project for Marine and Coastal Governance and Fisheries Management for Sustainable Blue Growth in the WIO (NCS-SWIOFC)**, whose goal is to improve coordination between fisheries and environmental management to maintain the health of the WIO's fisheries resources and ecosystems. 2019-2023. Financed by the Swedish International Development Agency; $8.6M (between NC and FAO/SWIOFC). Major project activities expected to begin in 2020.
- **Integrated Management of the Marine and Coastal Resources of the Northern Mozambique Channel Project (NoCaMo)**, whose goal is to sustainably manage marine and coastal resources of the Northern Mozambique Channel. 2020-2024. Financed by FFEM €1,500,000; Total Co-Financing: €4,200,000; (Between NC, Wildlife Conservation Society, CORDIO, WWF-Madagascar). Major project activities expected to begin in 2020.

CHAPTER 2. Approach and Methods

2.1 Preamble

This section presents the approach and methodology used to inform the preparation of this report on the COVID-19 impacts and consequent challenges and opportunities for SIDs in implementing the Aichi Biodiversity Actions, the successor Post 2020 Global Biodiversity Framework and management of BBNJ in the Western Indian Ocean (WIO).

2.2 Approach

The general approach utilised to prepare the report involved a desktop literature review and a survey instrument to capture insights from key informants with the purpose of:

(i) Determining and documenting the impacts of COVID-19 pandemic on the economy, livelihoods, poverty dimension, gender and culture of the WIO-islands.

(ii) Identifying the implications of the pandemic on the eventual achievement of the 2030 Agenda for Sustainable Development (SDG 14), the Aichi Biodiversity Targets (Aichi Targets: 3, 6, 8, 10, 11, 17, 18 and 19), the SAMOA Pathway, and SIDS engagement in the post 2020 global biodiversity framework and the negotiations of the international legally binding instrument under UNCLOS on biodiversity in areas beyond national jurisdiction (BBNJ).

(iii) Identifying the impacts of the pandemic on the implementation of key projects supported by the Nairobi Convention (especially under WIOSAP) in SIDs.

(iv) Generating recommendations on mitigating actions to build back better and enhance resilience following the shocks precipitated by the COVID-19 pandemic.

(v) Generating recommendations on the major actions necessary and required support for the effective implementation of the Global Biodiversity Framework and 2030 Agenda for ocean related SDGs.

2.3 Methods

2.3.1 Literature Review

The literature review aimed to identify and capture relevant pre-existing information from the published literature (i.e., scientific literature, and grey reports, policy briefs, information products) and online sources (e.g., databases, websites, and various forms of media). The online search attempted to capture information on:

- The pre- and post-COVID characteristics of the WIO-islands with a particular focus on the economy, livelihoods, poverty, gender and culture, and biodiversity.
- Details about the progression of the COVID-19 pandemic within each SIDS, and national responses (i.e., lockdowns, curfews, quarantine, border closures, vaccination).
- Current progress towards SDG14, Aichi Targets, SAMOA Pathway etc.

A representative, non-exhaustive list, of some of the online resources and data portals used in the assignment are presented below:

- Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU) https://coronavirus.jhu.edu/map.html
- UN-DESA https://www.un.org/development/desa/dpad/document_gem/undesa-policy-brief/
- UN- IACG http://unohrlls.org/about-sids/
- Convention on Biodiversity https://www.cbd.int/conferences/post2020
- Nairobi Convention https://www.nairobiconvention.org/
- Indian Ocean Commission http://www.commissionoceanindien.org/
- SGP Human Development Report https://dashboards.sdgindex.org/profiles
- UNDP online databases https://data.undp.org/ and the COVID-19 Data Futures Platform and https://www.undp.org/content/undp/en/home/coronavirus.html,
- UNDP SIDS Unit Bulletins https://us4.campaign-archive.com/home/?u=cf50bc7216b0c4b063618fbac&id=c2c8d779ea
- UNDP Spark Blue Platform https://www.sparkblue.org/dashboard/small-island-developing-states
- The Food and Agriculture Organization (FAO) http://www.fao.org/home/en/
- World Bank https://data.worldbank.org/ and http://wdi.worldbank.org/tables
- UNEP-WCMC Protected Planet https://www.protectedplanet.net/en
- Ocean Panel https://oceanpanel.org/bluerecovery
- Information available on national websites (e.g., National Bureau of Statistics, Ministries responsible for Health, social media account e.g. Facebook, Twitter etc).

2.3.2 Survey Instrument

A survey instrument was prepared for use in collecting insights from key informants in the WIO-islands (Comoros, Madagascar, Mauritius and Seychelles). The survey form aimed to capture information related to topics related to the impacts of COVID-19 pandemic on the economy, livelihoods, poverty dimension, gender and culture of SIDs, progress towards 2030 Agenda for Sustainable Development (SDG 14), the Aichi Biodiversity Targets, the SAMOA Pathway, and SIDS engagement in the post 2020 global biodiversity framework and the negotiations of the international legally binding instrument under UNCLOS on biodiversity in areas beyond national jurisdiction (BBNJ).

The survey was prepared in Google Forms (English) and in Microsoft word (French and English). Key informants were identified with the support of the Nairobi Convention Secretariat, and the form distributed via email as a Google Form and in Microsoft Word. The survey form was also used to guide virtual semi-structured interviews with key informants. Key informants included:

- Nairobi Convention national focal points (NFPs)
- CBD NFPs
- CBD's Programme of Work on Protected Areas (PoWPA) NFPs
- Global Environment Facility (GEF) NFPs
- Intergovernmental Oceanographic Commission (IOC) NFPs

- Regional organisations (e.g,, WIOMSA, Nairobi Convention, Indian Ocean Commission, Indian Ocean Tuna Commission)
- Project focal points
- SIDS NFPs
- UN Development Program (UNDP) NFPs
- UN Food and Agriculture Organisation (FAO) NFPs

2.3.3 Reviewing the Implications

Building upon the background literature search for information about the pandemic on WIO-islands, an initial review of this information was completed to identify and document the implications of the COVID-19 pandemic on progress towards achieving:

- 2030 Agenda for Sustainable Development SDG14 (Table 2-1)
- Aichi Biodiversity Targets (see Table 2-2)
- SAMOA Pathway (see key actions listed above)
- SIDS engagement in the Post 2020 Global Biodiversity Framework (GBF) and
- SIDS engagement in negotiations of the international legally binding instrument under UNCLOS on Biodiversity in areas Beyond National Jurisdiction (BBNJ).

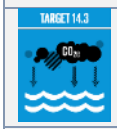
The review attempted to use the background literature to: (i) consider progress towards the existing targets at the national level and to identify and characterise existing constraints pre-COVID. (ii) identify and characterise how the pandemic has influenced progress towards the existing targets within the SIDS at the national level, and (iii) how the pandemic has influenced SIDS engagement in regional and international level processes relating to the Post 2020 GBF and BBNJ. Questions relating to progress with regards the SDG14, Aichi Biodiversity Targets, SAMOA Pathway, and engagement in Post-2020 GBF, and BBNJ were included in questionnaires distributed to key informants.

2.3.4 Project Impacts

The assessment of the impact of the pandemic on the implementation of key projects focused on characterising projects supported by the Nairobi Convention[14], and primarily on the impact of the pandemic on the delivery of the UNEP-GEF supported project entitled "*Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIOSAP)*". The survey form was also distributed to project managers for other ongoing biodiversity and SDG14 focussed projects in the region being supported by the Global Environment Facility (GEF) and other donors (e.g., EU, Adaptation Fund).

[14] https://www.unep.org/nairobiconvention/projects

Table 2-1 SDG14 Targets and Indicators (grey shading shows those targets that are excluded from consideration from the current study)

SDG14 Target		Indicators
	**14.1**. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	**Indicator 14.1.1**: Index of coastal eutrophication and floating plastic debris density.
	**14.2**. By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.	**Indicator 14.2.1**: Proportion of national exclusive economic zones managed using ecosystem-based approaches.
	**14.3**. Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	**Indicator 14.3.1:** Average marine acidity (pH) measured at agreed suite of representative sampling stations.
	**14.4**. By 2020, effectively regulate harvesting and end over fishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	**Indicator 14.4.1:** Proportion of fish stocks within biologically sustainable levels.
	**14.5**. By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.	**Indicator 14.5.1:** Coverage of protected areas in relation to marine areas.
	**14.6**. By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and over fishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.	**Indicator 14.6.1:** Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing.
	**14.7**. By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.	**Indicator 14.7.1:** Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries.
	**14.a.** Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.	**Indicator 14.a.1**: Proportion of total research budget allocated to research in the field of marine technology.
	**14.b.** Provide access for small-scale artisanal fishers to marine resources and markets.	**Indicator 14.b.1:** Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries.

SDG14 Target		Indicators
	**14.c**. Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want.	**Indicator 14.c.1:** Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources.

Table 2-2 Aichi Biodiversity Targets agreed through the Convention on Biological Diversity Strategic for Biodiversity 2011 to 2020 (grey shading shows those targets that are excluded from the current study).

Aichi Biodiversity Targets	
	**Target 3** By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
	**Target 6** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
	**Target 8** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
	**Target 10** By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
	**Target 11** By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.
	**Target 17** By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
	**Target 18** By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
	**Target 19** By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

2.3.5 Mitigation Measures

Potential mitigation measures that SIDS could employ to enhance resilience and build-back better following the shocks precipitated by the COVID-19 pandemic were identified from both the literature and responses to the questionnaire. This allowed for the identification of an initial set of potential mitigation measures for WIO-islands to build back better and enhance resilience following the shocks precipitated by the COVID-19 pandemic, which are presented in Chapter 5.

2.3.6 Recommendations

Potential actions needed to support the effective implementation of the Global Biodiversity Framework and 2030 Agenda for ocean related SDGs have been identified from both the literature review and responses to the questionnaire. Key informants were asked to provide their opinions about the potential actions, and to offer any additional ideas which they may consider appropriate. This allowed for the identification of an initial set of 10 recommendations for support that could be provided to the WIO-islands to assist them address the challenges of reporting on the GBF and SDG14, as presented in Chapter 6.

2.4 Challenges

The principal challenge has been timing of this study in midst of the ongoing COVID-19 pandemic. The situation remains quite dynamic globally, and within the WIO region, as the countries begin to re-open their international borders. Appreciating the fluidity of the current situation, the present study can only attempt to provide a snap-shot in time that considers and assesses the impact and implications of the pandemic to date. The full scale of the impact of the pandemic on biodiversity and implications for sustainable development will likely not become fully apparent until much later.

Data and reference source materials were not equally available for the four countries included in the study. There is a general lack of up-to-date, easily accessible aggregated / dis-aggregated data for countries within the WIO region, an issue that the Nairobi Convention has been and continues to tackle. There are noticeable disparities in terms of the ready availability of data for the WIO-islands, with data being more easily accessible for Mauritius and Seychelles, and less so for Comoros and Madagascar. Data, analyses and reports that summarise these data were available for individual countries, or for regional groupings, including Africa, or international groupings, including middle- and low-income countries and SIDS, but not for the grouping of countries included in this report. The international resources and analyses available for SIDS did not however include Madagascar.

For efficiency, a questionnaire was developed for use in the assessment. It was anticipated that this approach would provide a broad sense of the current situation within the WIO-islands in the Nairobi Convention region. However, the questionnaire covered a broad range of topics and not all key informants were able to respond to all parts, so a snowball sampling approach was needed to follow up on specific topics. Response times for such questionnaires are normally slow, but the added complications of the COVID-19 pandemic and the short time frame for the consultancy meant that only a limited the number of responses were obtained.

Finally, many of the challenges the WIO-islands face in terms of delivering on Agenda 2030 or CBD targets existed before COVID-19. Some of these challenges have been exacerbated by the restrictions,

and others only just now being brought to light. There has been limited time to fully tease these apart during what is effectively a scoping exercise. Studies of the impacts in the mid- to long term need to take into consideration the cumulative impact of the various threats and pressures.

2.5 Lessons Learned

Scoping the impacts of a pandemic while it is still ongoing can only attempt to provide early insights. The full scale, severity/magnitude and duration of the eventual impact will only become apparent later.

For the past year, many of the WIO countries have remained closed to visitors and imposed a range of other national restrictions to stem the spread of the virus. Normal activities have either ceased, slowed down, or transformed into digital formats, including the delivery of projects. The current situation in the WIO-islands remains dynamic. Many countries are now entering a new phase in the pandemic as they cautiously start to re-open their international borders and resume business. For the countries that managed to control the initial spread of the virus, they now face the immense challenge of managing rising infection rates, new variants, while also trying to learn to adapt and live with the virus. There is therefore a need to continue to track the impacts of the pandemic on WIO-islands, their biodiversity and sustainability to determine the long-term impacts and effectiveness of any mitigation actions.

One of the characterising features of SIDS during pre-COVID times and even more so during-COVID is capacity constraints, mostly in terms of available human resources i.e., staff time. The length of time needed for the development of such reports needs to take this into account.

CHAPTER 3. Assessing the Impact of the COVID-19 Pandemic on WIO-SIDS

3.1 Preamble

This chapter aims to explain the progression of the COVID-19 pandemic within Comoros, Madagascar, Mauritius and Seychelles during 2020 to mid-2021, and the associated socio-economic and environmental impacts.

3.2 Progression of the COVID-19 Pandemic on the WIO-islands.

3.2.1 Union of Comoros

The first suspected case of COVID-19 was detected in Comoros in early April 2020[15]. The Government acted to control the spread of the virus by introducing a quarantine period of 14 days for all travellers, banning large gatherings, and cancelling all incoming flights[16]. A website was set up to communicate information about the virus was also set up in April 2020[17].

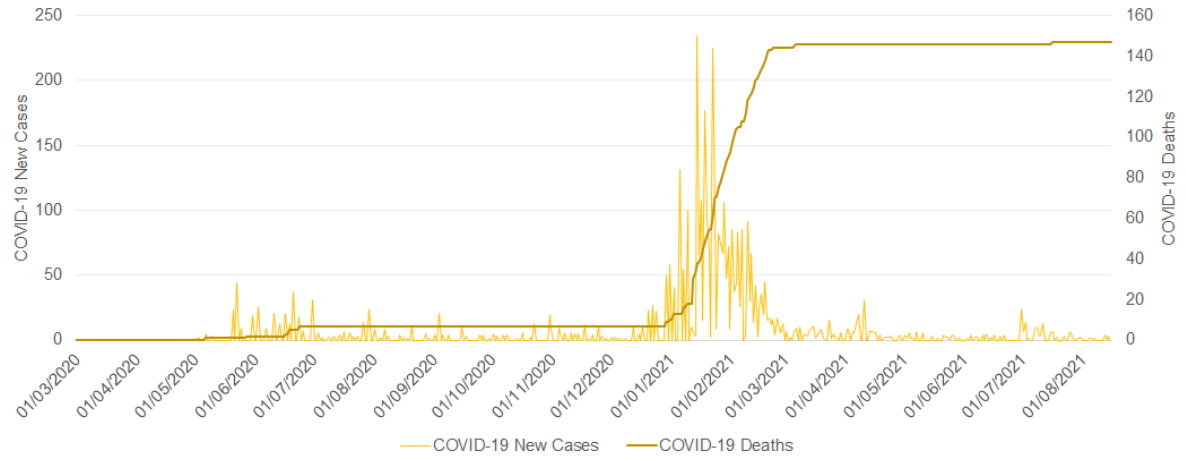


Figure 3-1: Number of new COVID-19 cases and cumulative deaths in the Union of Comoros[18,19].

Medical aid was received from the WHO on 17 April 2020[20] and a polymerase chain reaction (PCR) screening machine[21] was received on 22 April 2020. Donations of medical equipment were also received from India (face masks and other supplies), Madagascar (COVID-Organic), UNICEF (ventilators), and UN (rapid tests).

[15] The first suspected death from COVID-19 was reported to have occurred on 8th April 2020. https://en.wikipedia.org/wiki/COVID-19_pandemic_in_the_Comoros
[16] Coronavirus – Comoros travel advice". https://www.gov.uk/foreign-travel-advice/comoros/coronavirus.
[17] https://stopcoronavirus.km
[18] Source COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. (JHU CSSE COVID-19 Data) https://github.com/CSSEGISandData/COVID-19
[19] Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Inf Dis. 20(5):533-534. doi: 10.1016/S1473-3099(20)30120-1"
[20] Comores : l'OMS sur tous les fronts contre le COVID-19". World Health Organization (in French). https://www.afro.who.int/fr/news/comores-loms-sur-tous-les-fronts-contre-le-covid-19
[21] https://stopcoronavirus.km/actualit%C3%A9s/2020/04/23/les-comore-se-dotent-d%E2%80%99un-pcr/

The first confirmed case of COVID-19 was reported on 30 April 2020. The government of Comoros decided that total confinement was not an option for Comoros. As more cases were found on the main island of Grande Comore, a curfew was initiated on 02 May 2020. The first death was announced on 04 May 2020, and further cases were detected on Mohéli.

By the middle of May, following the confirmation of a case on Anjouan (Ngazidja) on 19 May 2020,[22] the virus was active on all major islands. The Grand Mufti requested people celebrate Eid al-Fitr at home. The wearing of face masks outdoors was made mandatory on 08 July 2020 across the entire territory.

Cases continued to be reported throughout the remainder of 2020. On 23 January 2021, the first cases of the SARS-COVID beta variant (501.V2) were confirmed. There were 1,903 new cases in January, 845 new cases in February, and 125 new cases in March. The vaccination programme started in April 2021, following the receipt of 100,000 doses of the Sinopharm vaccine from China.

In July 2021, borders between Mayotte and Comoros re-opened with four flights per week. Entry to Comoros requires vaccination with a vaccine recognized by the European Medicines Authority, a negative result of a PCR test of less than 72 hours or proof of a compelling reason to travel.

By mid-August, a total of 4,038 confirmed COVID-19 cases had been reported and the death toll was 147. Comoros had administered 239,158 vaccine doses and fully vaccinated 7.4% of the population.

3.2.2 Madagascar

The first confirmed cases of COVID-19 in Madagascar were reported on 17 March 2020, which included three cases in Antananarivo, the capital of Madagascar. The Government announced that all international and regional flights would be suspended for 30 days, starting 20 March 2020[23]. A further 57 persons tested positive in March, followed by a further 128 cases reported in April.

On 20 April 2020, the President of Madagascar officially launched a coronavirus "cure" called "COVID-Organic". Developed by the Madagascar Institute of Applied Research (MIAR), COVID-Organic is a herbal tea made using *Artemisia annua*, which has anti-malarial properties, and other locally sourced herbs. The military was dispatched to hand out batches of "COVID-Organic" to the local population[24].

During May 2020, the total number of confirmed cases reached 771. Lockdowns were implemented in at least two cities in the central region including Antananarivo, in response to a spike in new cases in the capital. The first COVID-related death was recorded on 16 May 2020, and the European Centre for Disease Prevention and Control confirmed that a further 6 persons had died from COVID-19. The total number of confirmed cases rose to 2,214 and the death toll increased to 20 in June. On 07 July 2020, a lockdown was reimposed in the central region to control the surge in cases.

[22] https://stopcoronavirus.km/actualit%C3%A9s/2020/05/19/communiquer/
[23] http://mg2.mofcom.gov.cn/article/chinanews/202003/20200302946118.shtml
[24] https://web.archive.org/web/20200502065651/http://www.straitstimes.com/world/africa/madagascar-hands-out-miracle-coronavirus-cure-as-it-lifts-lockdown

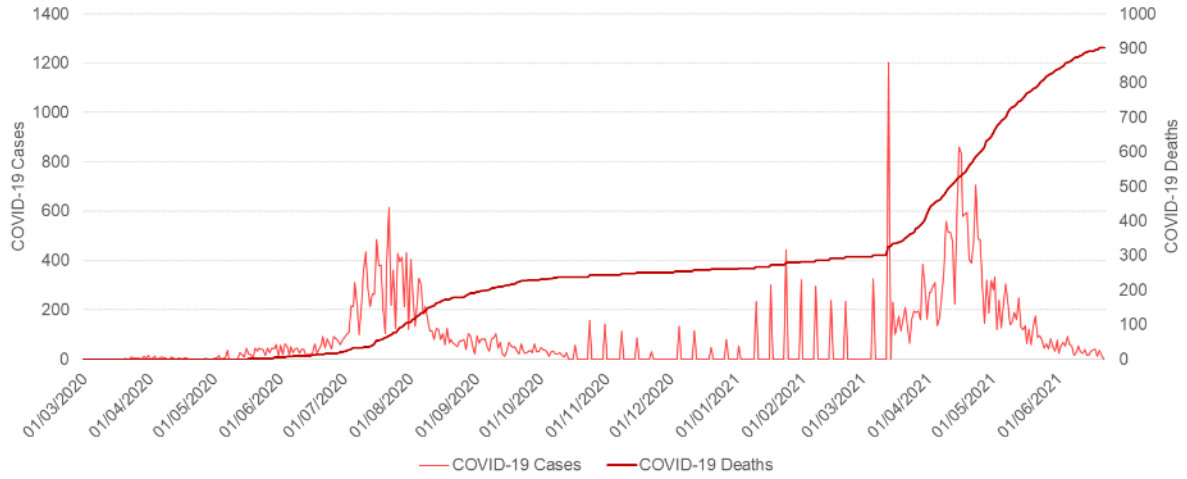


Figure 3-2: Number of new COVID-19 cases and cumulative deaths in Madagascar[25,26].

The number of confirmed cases and the death toll continued to rise through to the end of 2020. In November 2020, a government spokesperson affirmed Madagascar's decision not to participate in the global COVAX initiative[27] to access vaccines once they have been approved and licensed[28]. The spokesperson confirmed the continued use of the traditional "COVID-Organic".

By December 2020, the total number of confirmed cases was 17,714 and the death toll was 261. New cases continued to rise from January 2021 onwards, reaching a peak in April 2021 (12,318). By May 2021 the total number of confirmed cases was 41,342 and the death toll 840.

By mid-August 2021, a total of 42,811 cases had been reported and the death toll was 952. Madagascar received 250,000 doses of the Oxford–AstraZeneca Covishield vaccine courtesy of COVAX on 08 May 2021, and vaccinations started two days later[29]. Health officials administered only 197,001 of the doses before they expired on 17 June, because not enough people turned up to receive them[30].

Vaccination efforts since then appeared to have stalled. The World Bank has approved $100 million in International Development Association (IDA) financing to accelerate the procurement and deployment of COVID-19 vaccines in Madagascar[31]. The funding was to enable the immunization of around 5.6 million people (40% of the population), complementing support from COVAX and others. The financing is also intended to strengthen the immunization services through investments in the health system to ensure effective delivery of COVID-19 vaccines and support future immunization efforts.

3.2.3 Republic of Mauritius

Mauritius was considered to be one of the countries in the African region to be at greatest risk of a public health disaster due to COVID-19[32]. The island has a high population density (623 people per

[25] Source COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. (JHU CSSE COVID-19 Data) https://github.com/CSSEGISandData/COVID-19
[26] Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Inf Dis. 20(5):533-534. doi: 10.1016/S1473-3099(20)30120-1"
[27] An alliance of international organizations that aims to distribute vaccines to low- and middle-income countries.
[28] https://www.africanews.com/2020/11/27/madagascar-takes-last-stand-on-covid-19-vaccine-refuses-immunization//
[29] https://www.unicef.org/madagascar/en/press-releases/madagascar-receives-first-batch-250000-vaccine-doses-part-covax-initiative
[30] https://www.nature.com/articles/d41586-021-01933-9
[31] https://www.worldbank.org/en/news/press-release/2021/06/25/accelerating-access-to-covid-19-vaccines-in-madagascar
[32] World Health Organization, 2020. Maurice: WHO plays key role in curbing COVID-19. [Online]

km^2), an aging population, with the highest proportion of elderly in sub-Saharan Africa[33] (12% of population aged 65+ where average is 3%), together with a high prevalence of non-communicable diseases (NCDs) that are risk factors for COVID-19 (e.g., diabetes and hypertension) [34,35].

Mauritius reported the first cases of COVID 19 on 18 March 2020, when three incoming travellers tested positive. The first death was reported on 21 March 2020, and the country went into lockdown.

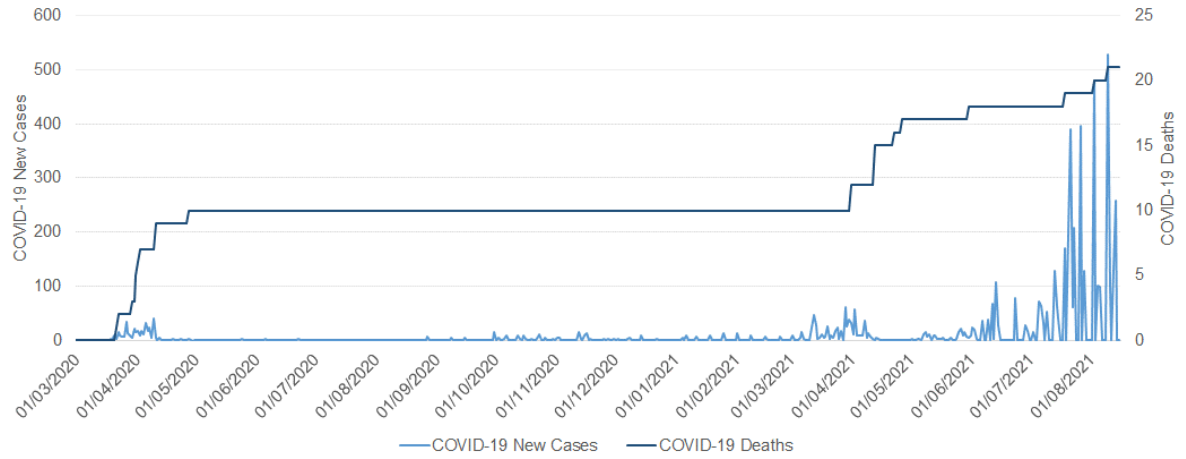


Figure 3-3: Number of new COVID-19 cases and cumulative deaths in the Republic of Mauritius[36,37].

The Government had already begun to put in place measures before the first cases were detected, which aimed to protect the most vulnerable, with a specific focus on the elderly populations, and co-morbidity risk factors, including NCDs. The measures included both communication tools and regulatory restriction measures to control the spread of the virus[38].

Both traditional and modern communication channels were used to raise awareness of the threat posed by COVID-19, including radio, posters, leaflets, videos, and social media. The official Ministry of Health and Wellness (MoHW) Facebook page (Coronavirus Moris)[39], launched on 16 March 2020, published 5 to 10 posts a day in Creole, English and French. There were over 50,000 subscribers. Key messages from WHO and MoHW were posted daily. The messages aimed to alert the population about both the regulatory measures, and to relay evidence-based information about the risks of COVID-19 and linkages to other factors (e.g., alcohol and tobacco-use, poor diet and physical inactivity). A similar Facebook page was set up by the Rodrigues Regional Assembly (RRA) for the island of Rodrigues[40] on 23 March 2020.

[33] The World Bank, 2020. Mauritius. [Online] Available at: https://data.worldbank.org/country/mauritius
[34] World Health Organization, 2018.. Noncommunicable Diseases (NCD) Country Profiles, Geneva: World Health Organization.
[35] World Health Organization, 2018. Noncommunicable Diseases (NCD) Country Profiles, Geneva: World Health Organization.
[36] Source COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. (JHU CSSE COVID-19 Data) https://github.com/CSSEGISandData/COVID-19
[37] Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Inf Dis. 20(5):533-534. doi: 10.1016/S1473-3099(20)30120-1"
[38] Kowlessur, S. et al., 2020. Tackling the COVID-19 pandemic in paradise: the Mauritian experience. The Lancet Diabetes & Endocrinology, Volume 8, Issue 11, pp. 878 - 879.
[39] Facebook Moris. [Online] Available at: https://www.facebook.com/coronavirusmoris/
[40] https://www.facebook.com/coronavirusrodrigues/

Figure 3-4 Infographic explaining the lockdown restrictions in Rodrigues.

The island of Mauritius was put in total lockdown between 24 to 31 March 2020, except for essential services. The lockdown included supermarkets, which limited access to alcohol and tobacco. Internal flights between Mauritius and Rodrigues were ceased, and Rodrigues was put in total lockdown until the 02 April 2020. The lockdown on both islands was extended and the gradually eased.

On Mauritius, the reopening of services was controlled; supermarkets reopened but leisure facilities (casinos, cinemas and nightclubs) remained closed. Sports, social and cultural events were banned and public spaces such as beaches or gardens remained closed until mid-June[41]. Front liners and essential services were subject to the 'Work Access Permit' system.

The initial outbreak on Mauritius was effectively contained within 39 days and by 26 April 2020 there were no locally transmitted cases. The handling of the pandemic was applauded by the international community[42]. It was not until November 2020 that cases of community transmission started to be reported again and local lockdowns initiated.

In March 2021, a new outbreak started with approximately 30 new cases being reported daily, and another lockdown was introduced. A new Temporary Restrictions of Movement Order was bought into force, which increased the fines for the failure to wear a mask from 50,000 Mauritian rupees to 500,000 ($12,400; £8,900) and introduced a jail term.

While both the first outbreak in 2020 and the second outbreak in 2021 were contained, by June 2021 new cases started to be reported across the island. Community transmission has since been being dealt with through local lockdowns. During this time Rodrigues, has remained entirely closed. Flights between Mauritius and Rodrigues resumed in late July 2021.

[41] Republic of Mauritius, 2020. Government Notices no 101. The Public Health Act. [Online]
Available at: https://gpd.govmu.org/HomeDownloadSection/101_THE%20COVID-19%20(CLOSING...
[42] Munyaradzi, M., 2020. COVID-19 in Africa: half a year later. The Lancet Infectious Diseases, p. 1127.

By mid-August 2021, there were 5,601 confirmed cases on the island of Mauritius since the start of the pandemic and 21 deaths. There have been no confirmed cases on the island of Rodrigues and no deaths. Mauritius had administered 1.43 million vaccine doses, and 51.8% of the population was fully vaccinated. There have been no vaccines administered in Rodrigues.

The government is planning to re-open the international border at the end of October 2021. Rodrigues island remains closed due to the low level of vaccination among the local population and low health resources.

3.2.4 Republic of Seychelles

In Seychelles, the Public Health Authority activated their disease surveillance and response system to detect cases of the coronavirus in January 2020. Quarantine facilities and an isolation unit were set up, and travel restrictions were put in place. No Seychellois, apart from returning residents, were allowed to travel to China, South Korea, Italy and Iran. Seychelles also temporarily closed to cruise ships to protect the population from the threat of the COVID-19 virus.

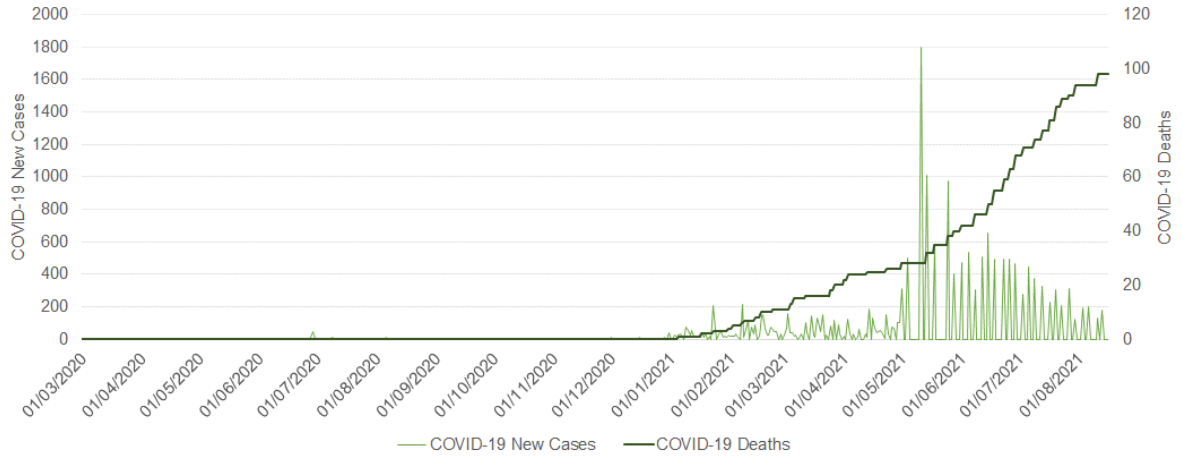


Figure 3-5: Number of new COVID-19 cases and cumulative deaths in the Republic of Seychelles[43,44].

Seychelles reported the first two cases of COVID-19 on 14 March 2020, which were residents returning from Italy. The response was ramped up, and on 18 March 2020 all visitors from Europe, Mayotte and Reunion were banned from entering and returning residents were required to quarantine for 14 days. On 20 March 2020, Seychelles placed a temporary ban on foreign yachts entering the country's waters, and the list of banned nationals was expanded to include Americans and Australians. Confirmed cases rose to seven (7) including three Seychellois.

In March 2020, the Government of Seychelles announced the following measures[45]:

- A 30-day ban on foreign travel by Seychellois citizens.

[43] Source COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. (JHU CSSE COVID-19 Data) https://github.com/CSSEGISandData/COVID-19

[44] Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Inf Dis. 20(5):533-534. doi: 10.1016/S1473-3099(20)30120-1"

[45] Address by President Danny Faure on measures to address the COVID-19 situation). https://www.statehouse.gov.sc/speeches/4818/address-by-president-danny-faure-on-measures-to-address-the-covid-19-situation 20 March 2020 |

- The closure of all public schools and day care centres on the main islands (Mahe, Praslin and La Digue), including the post-secondary institutions.
- Loan repayments were reduced 6 months, including a moratorium on loan repayments for exceptional cases, cover both interest and capital repayments in this six-month period.
- Government guarantee of salaries of all private sector employees in April, May and June. A total of SCR1.2 billion ($88 million) has been budgeted for this intervention. No redundancies will be approved.
- All foreign workers on a GOP (Gainful Occupation Permit) and outside Seychelles will not be able to return to the country until further notice. No new Gainful Occupation Permit will be issued until further notice and this also takes effect immediately.
- Tax payments due in March were postponed (September 2020), while payments for all other taxes whose deadlines are in April, May and June will remain in place.
- New government budget for 2020 was drawn up.
- Budgetary allocation for the Agency of Social Protection wase increased to support those affected (SCR30 million, 2 million USD).
- Government offered financial assistance to struggling businesses to ensure employees are paid in April, May and June. We are finalising the structure through which this will work and we will start making the first payments in mid-April," said Faure.
- To encourage local food production, the Seychelles Trading Company offered to buy any produce farmers wished to sell to STC.
- 14 plots of land were identified and made available to the Farmer's Association for further production. Investment loans interest rates for agriculture or fisheries were reduced to 1 percent.

Seychelles re-opened for tourism in October 2020. Numbers of new cases reported remained low throughout the remainder of 2020 until January 2021.

Seychelles registered the first COVID-19 related death on 5 January 2021. Case numbers started to rise from April 2021 onwards, as the number of airlines resuming flights increased (April - Air Seychelles, Aeroflot, Air Austral, Emirates, Qatar, and Turkish Airlines, May - Ethiopian airlines, June - Kenya Airways and July - Edelwiss Airways). The reason for the increasing case numbers was linked to the arrival mid-May 2021 of the Alpha, Beta and Delta variant.

There are currently no quarantine requirements for arriving passengers, but restrictions are still in place. All visitors must submit a negative PCR COVID-19 test taken within 72 hours prior to departure and there is a nationwide curfew from 11 p.m. to 4 a.m. Shops, bars, casinos, and other businesses are operating shorter business hours. Visitors with a physical presence in India, Pakistan, Bangladesh, and Brazil are not permitted entry.

By mid-August 2021, a total of 18,895 cases had been reported from Seychelles and the death toll was 98. Seychelles had administered 143,490 vaccine dose and fully vaccinated 70.9% of the population.

Cruise ships are still not allowed with the re-opening planned for November 2021.

3.2.5 COVID-19 Situation as of August 2021

Table 3-1 shows a summary of the pandemic related restriction measures used in the WIO-islands.

Table 3-2 shows the total number of COVID-19 confirmed cases, deaths, deaths per million, and case fatality as of mid-August 2021. Figure 3-6 shows the cumulative deaths in the WIO-islands from the

start of the pandemic 2020 to mid-August 2021. Table 3-3 show progress with the roll out of the vaccine.Table 3-2

The total number of confirmed COVID-19 cases remains highest in Madagascar followed by Seychelles, Comoros and Mauritius. Total COVID-19 related deaths are also highest in Madagascar, followed by Comoros, Seychelles and Mauritius. By comparison, deaths per million were highest in Seychelles (996.5), on account of the small population size, but these figures are still substantially lower than in countries such as the USA and UK (1,906 and 1,947 respectively).

Case fatalities were highest in Comoros (3.63%), followed by Madagascar (2.23%), and lowest in Mauritius (0.31%) and Seychelles (0.53%). Both Seychelles and Mauritius are among the top 10 countries globally with the lowest case fatalities, also taking note that there have still been no reported COVID-19 cases from the islands of Rodrigues, Agalega or St Brandon.

In summary, there are noticeable disparities in the stringency of the control measures put in place to contain the spread of the virus during the initial stages of the pandemic between the WIO-islands. There was a pre-existing polarity in the social situation and health care provision between Seychelles and Mauritius compared to Comoros and Madagascar. As of August 2021, Seychelles and Mauritius had already vaccinated over half of their populations (70.9% and 51.8% respectively), while vaccination rates in Comoros (7.4%) and Madagascar (<1%) were much lower. The roll out of the vaccine in both Comoros and Madagascar was slower to get started and will take longer to complete. It will therefore take longer for these countries to be able to fully restart their economies.

Table 3-1 Summary overview of COVID-19 metrics and restriction measures used in the WIO-islands.

	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
First confirmed case	30 April 2020	20 March 2020	18 March 2020	14 March 2020
First confirmed death	04 May 2020	16 May 2020	21 March 2020	05January 2021
International travel bans	✓	✓	✓	✓
Cruise ban	NA	NA	✓	✓
Quarantine arrivals	✓	×	✓	✓
Large gatherings banned	✓	×	✓	✓
School closures	✓	×	✓	✓
Businesses closures	✓	✓	✓	✓
Stay at home orders	×	✓	✓	✓
Curfews	✓	×	✓	✓
Road closures	×	×	×	✓
Lockdowns	None	✓ 6-20 July 2020	✓ 24-31 March. 10 March-10 April 2021	✓ 8-30 April 2020

SOURCE: Various newspaper articles and reports.

Table 3-2 Number of confirmed COVID-19 cases, death toll, deaths per million and case-fatality rates on WIO-islands (to mid-August 2021).

	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
COVID-19 confirmed cases	4,083	42,811	5,607	18,895
COVID-19 deaths	147	952	21	98
Deaths per million	169	34.4	16.5	996.5
Case-fatality (%)	3.63	2.23	0.31	0.53

TOTAL	71,351	1,218

SOURCE: Our World in Data

Table 3-3 Progress with COVID-19 vaccinations on WIO-islands (to mid-August 2021).

COUNTRY	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
Vaccine doses administered[46]	239,158	197,001	1,430,00	143,490
People fully vaccinated[47]	64,126	-	658,194	69,713
% Population fully vaccinated[48]	7.4	<1	51.8	70.9
Doses administered per 100 people[49]	27.5	0.71[50]	112.16	145.91

SOURCE: Our World in Data

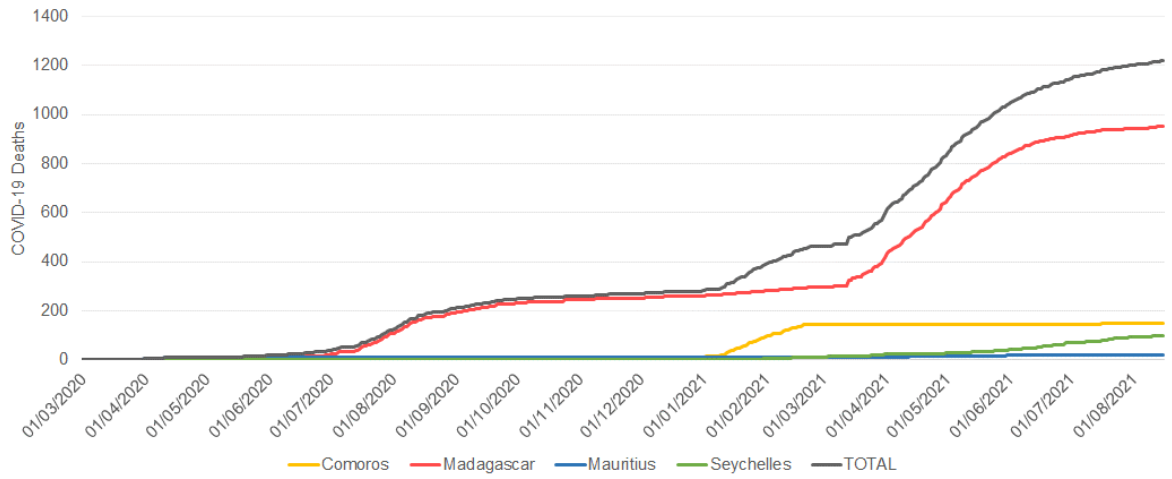


Figure 3-6: Cumulative number of COVID-19 deaths in Comoros, Madagascar, Mauritius and Seychelles[51,52].

3.2.6 Regional support for SIDS handling COVID-19 human health emergency

In view of their unique and particular vulnerabilities, the WHO organises a forum every two years which offers an opportunity for SIDS to specifically address health related vulnerabilities, build resilience and sustainability. The forum provides a platform to exchange views and experiences and monitor the achievements made in health development agenda. The forum last met in 2017 in Seychelles.

The high cost of drugs and medical supplies is one of the major challenges SIDS face due to their modest populations. The costs also impede the provision of affordable good standard health care. In September 2020, a Pooled Procurement Programme was agreed between African SIDS (Cabo Verde, Comoros, Guinea-Bissau, Madagascar, Mauritius, Sao Tome & Principe and Seychelles) to take advantage of economies of scale in purchasing pharmaceutical supplies[53]. The agreement, which was

[46] See https://ourworldindata.org/covid-vaccinations
[47] See https://ourworldindata.org/grapher/people-fully-vaccinated-covid?country=COM~MUS~SYC
[48] See https://ourworldindata.org/grapher/share-people-fully-vaccinated-covid?country=COM~SYC~MUS
[49] See https://ourworldindata.org/grapher/covid-vaccination-doses-per-capita?country=MDG~MUS~COM~SYC
[50] Records show vacinnes administered to the 28th June 2021.
[51] COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. (JHU CSSE COVID-19 Data) https://github.com/CSSEGISandData/COVID-19
[52] Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Inf Dis. 20(5):533-534. doi: 10.1016/S1473-3099(20)30120-1"
[53] https://www.afro.who.int/news/african-island-states-launch-joint-medicines-procurement-initiative

established with the support of the WHO provided the guiding principles and governance structure, including the creation of a secretariat, technical committees and a council of ministers.

Regional support was also provided by International Economics, who worked with the Regional Multidisciplinary Centre of Excellence (RMCE) and the World Bank to promote regional cooperation solutions for both the private and public sector in their response to COVID-19[54]. Support was provided for: 1. Peer learning and support; 2. Production and procurement of Personal Protective Equipment (PPE) and other medical supplies; and 3. Production and procurement of COVID-19 testing. Intervention included building up a regional database of potential suppliers and demanders of critical COVID-19 medical supplies, for testing, logistical arrangements, and delivery networks, and mapping of critical players in the region, from procurement and a delivery/production standpoint.

WHO has also helped countries ramp-up sequencing capacities to detect new variants, and in February 20201, the WHO announced that the rollout of vaccines could start in Africa, following their approval of two versions of the AstraZeneca-Oxford COVID-19 vaccine. The roll out was planned, for 35 low-income countries eligible for free vaccines from the COVAX Facility[55] (the global initiative to ensure fair access to COVID-19 vaccines led by WHO, GAVI, the Vaccine Alliance, and The Coalition for Epidemic Preparedness Innovations (CEPI)).

3.3 Socio-economic Impacts

3.3.1 Economy

Before the pandemic, SIDS globally have been moving from lower to higher income levels[56]. Among the WIO-islands, Mauritius and Seychelles are both classified by the World Bank as High income (GNI above US$12 535) countries, while Comoros is classed as Lower middle income (GNI US$1,036 to US$4,045) and Madagascar as Low income (GNI US$1,036 or less)[57,58]. Both Comoros and Madagascar are also classified as Lesser Developed Countries (LDC)[59] while Mauritius and Seychelles

[54] See https://www.tradeeconomics.com/iec_projects/targeted-support-for-covid-19-recovery-in-indian-ocean-commission-ioc-and-accelerated-programme-for-economic-integration-apei-countries/

[55] Africa is getting ready to roll out COVID-19 vaccines (18 February 2021) [online]

[56] UNCTAD (2021) Income, Poverty Employment. https://dgff2021.unctad.org/sids-challenges/social-development-issues/income-poverty-and-employment/#Ref_Z7Y9EWL7 (Accessed 15th June 2021)

[57] World Bank (2021a) World Bank Country and Lending Groups. Available at https://datahelpdesk.worldbank.org/knowledgebase/articles/906519 (Accessed 30th May 2021)

[58] The World Bank classifies countries into income groups based on their GNI per capita, which measures the overall economic condition of a country. The classification guides the type borrowing available. High income countries can access International Bank for Reconstruction and Development (IBRD) non-concessional loans. Low and Lower middle-income countries that lack the financial ability to borrow from IBRD, can access International Development Association (IDA) credits, which are concessional-interest-free loans and grants for programs aimed at boosting economic growth and improving living conditions. IDA countries may also be able to access support through Heavily Indebted Poor Countries (HIPC) Initiative.

[59] The list of LDCs is reviewed every three years by the Committee for Development Policy, a group of independent experts that report to the Economic and Social Council of the United Nations. Following a triennial review of the list, the Committee may recommend, in its report to the Economic and Social Council, countries for addition to the list or graduation from LDC status. Between 2017 and 2020 the Committee for Development Policy undertook a comprehensive review of the LDC criteria and established the following three criteria, starting with the triennial review scheduled for February 2021:

> (a) A per capita income criterion, based on a three-year average estimate of the gross national income (GNI) per capita, with a lower threshold of $1,018 for identifying possible cases of addition to the list and a higher threshold of $1,222 for possible cases of graduation;
>
> (b) A human assets index (HAI), consisting of two sub-indices: a health sub-index and an education subindex. The health sub-index contains three indicators: (i) under-five mortality rate; (ii) maternal mortality ratio; (iii) and prevalence of stunting. The education sub-index contains three indicators: (i) gross secondary school enrolment ratio; (ii) adult literacy rate; and (iii) gender parity index for gross secondary school enrolment.

are not. These classifications have implications for the country's ability to access to finance, and moreover concessional finance.

On 13 April 2020, early into the pandemic, the International Monetary Fund (IMF) Executive Board decided to provide debt service relief to all countries eligible for support from the IDA in the form of grant assistance under the Catastrophe Containment and Relief Trust (CCRT). Beneficiary countries received relief from the CCRT on debt service falling due to the IMF for 6 months, which could be extended for up to 2 years, subject to the availability of resources under the CCRT. The WIO-islands to benefit for these packages included Comoros and Madagascar.

The United Nations Development Programme (UNDP) prepared a series of report presenting an initial assessment of the social and economic impact of COVID-19 on the WIO-Island[60,61,62,63], in line with the UN Secretary General's recommendation of extending UN support to national COVID-19 responses. The African Development Bank Group (ADBG) also produced an African Economic Outlook report[64]. The following sections, summarise the key findings from these reports:

3.3.1.1 Union of Comoros

The shock of the COVID-19 pandemic arrived on the back of two difficult years for Comoros, and less than a year after Cyclone Kenneth. Even before the first recorded case of COVID-19, the pandemic had a severe economic impact in Comoros: visitor arrivals stopped, remittance receipts slowed, and several banks had strains on their liquidity.

In Comoros, the agriculture sector contributes to nearly 30% of GDP and provides 90% of export revenue, through three cash products namely: vanilla, cloves, and ylang-ylang. It also employs nearly 57% of the labour force. The sector is generally small-scale, subsistence based, using traditional farming methods with low productivity, and it is vulnerable to climate shocks and international market price fluctuations. Food crop production is mainly for tuber crops and fruits with a very limited production of cereals, and the country imports 30,000 to 40,000 tonnes of rice annually. Livestock activities and fisheries, general manage to satisfy most of the demand without imports.

(c) The economic and environmental vulnerability index, consisting of two sub-indices: an economic vulnerability sub-index and an environmental vulnerability sub-index. The economic vulnerability sub-index contains four indicators: (i) share of agriculture, hunting forestry and fishing in GDP; (ii) remoteness and land-lockedness; (iii) merchandise export concentration; and (iv) instability of exports of goods and services. The environmental vulnerability sub-index contains four indicators: (i) share of population in low elevated coastal zones; (ii) share of the population living in drylands; (iii) instability of agricultural production; and (iv) victims of disasters.

For all three criteria, different thresholds are used to identify additions to the list of LDCs and graduations from LDC status. A country qualifies to be added to the list if it meets the addition thresholds on all three criteria and does not have a population greater than 75 million. Qualification for addition to the list effectively leads to LDC status only if the government of the country in question accepts this status. A country normally qualifies for graduation from LDC status if it has met graduation thresholds under at least two of the three criteria in at least two consecutive triennial reviews of the LDC list. However, if the three-year average per capita GNI of an LDC has risen to a level at least double the graduation threshold ($2,444), and if this performance is considered durable, the country will be deemed eligible for graduation, regardless of its score under the other two criteria. This rule is commonly referred to as the "income-only" graduation rule.

[60] UNDP (2020) The Socio-Economic Impact Assessment of COVID-19 in Mauritius.

[61] UNDP (2020) Note Sur Les Implications De La Pandemie COVID-19 Sur Le Developpement Economique Et Social De L'union Des Comores.

[62] UNDP (2021) Note on the impact of COVID-19 on the economy of Madagascar. Scenarios and Recommendations.

[63] UNDP (2021) An Assessment of the Socio-Economic Impact of COVID-19 in Seychelles.

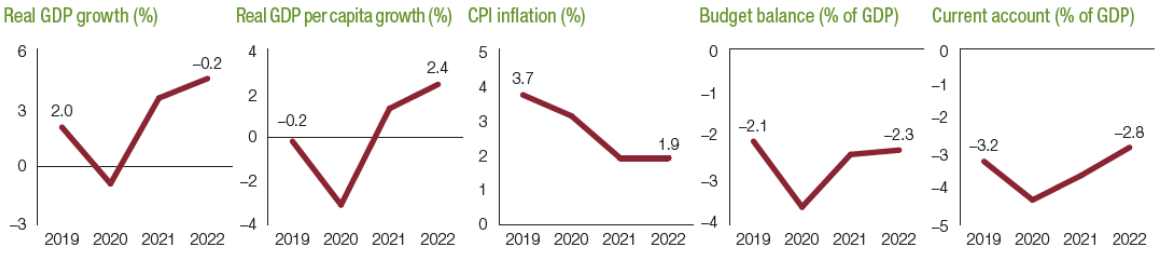
[64] ADBG (2021) African Economic Outlook: From Debt Resolution to Growth: The Road Ahead for Africa.

With projections indicating an external financing need of 5.2 percent of GDP, and a fiscal financing need of 4.7 percent of GDP, Comoros requested assistance from the IMF[65]. A US$12 Million in Emergency Assistance to the Union of the Comoros to Address the COVID-19 Pandemic was approved to meet the urgent balance of payment needs, to catalyse development partner support, and address imminent health system needs. Financing was provided under the Rapid Credit Facility (RCF) (US$ 4.05 million) and the Rapid Financing Instrument (RFI) (US$ 8.08 million). Comoros also benefited from IMF debt service relief under the CCRT.

The pandemic led to a decline in real GDP of –0.9%, compared with 2% growth in 2019 (Figure 3-7). The decline was mainly due to a drop in tourism and exports of cash crops. The restrictions on international travel impacted the service sector, which represents more than 50% of GDP. The agriculture sector, which represents 30% of GDP, was less affected, although exports of the key commercial crops (ylang ylang, vanilla and cloves) were negatively impacted.

Consumption stagnated and growth in the investment rate fell to 1.8% in 2020 from 10.5% in 2019. Comoros has a high propensity to import, and the Comorian franc, was pegged against the euro which helped stabilise inflation at 3.1% in 2020, compared with 3.7% in 2019, even though there was an increase in money supply between December 2019 and June 2020. The Comoros managed to maintain a high level of foreign exchange reserves, enough to cover 6.2 months of imports.

The budget deficit amounted to 3.6% of GDP in 2020, compared with 2.1% in 2019, due to lower tax revenues and increased public spending as a result of the COVID–19 pandemic. Remittances grew by 73.8% between the first half of 2019 and the first half of 2020. The current account deficit widened slightly to 4.3% of GDP in 2020, compared with 3.2% in 2019.



Source: Data are as of December 2020 and are from domestic authorities; figures for 2020 are estimates and figures for 2021 and 2022 are projections by the African Economic Outlook team.

Figure 3-7: Economic trends and outlook for Comoros 2019 to 2022[66].

3.3.1.2 Madagascar

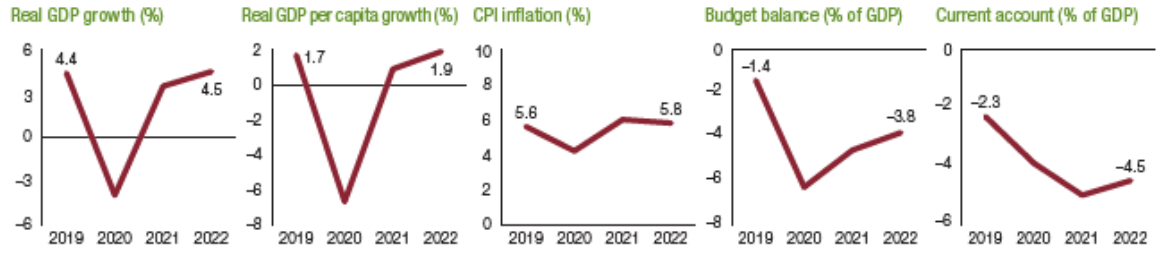
The COVID-19 pandemic hit Madagascar hard, reversing recent progress in per capita income and poverty reduction. The manufacturing, mining, and services industries were hardest hit because of containment measures, while agriculture performed well. The crisis also put pressure on the financial sector, prompting the central bank to inject liquidity into the system.

[65] https://www.imf.org/en/News/Articles/2020/04/22/pr20183-comoros-imf-exec-board-approves-us-12m-emergency-assistance-to-address-covid19-pandemic April 22, 2020

[66] ADBG (2021) African Economic Outlook: From Debt Resolution to Growth: The Road Ahead for Africa.

As the government took steps to mitigate the COVID–19 crisis, and tax revenues fell, Madagascar requested the assistance from the IMF and benefitted from two RCF disbursements in April 2020 (US$ 165.99 million) and July 2020 (US$ 171.9 million), equivalent to 2.4 percent of GDP, which helped close short-term financing gaps, supported mitigation measures, and contributed to catalysing donor budget support. Madagascar also benefited from additional External Debt Relief (US$ 312.4 million) in March 2021. The authorities also sought renewed assistance to help the country face protracted balance of payment needs aggravated by the impact of the pandemic and to support the authorities' reform agenda summarized in the Plan Emergence Madagascar (PEM).[67]

After real GDP growth of 4.4% in 2019, the country went into a recession in 2020, with real GDP declining to -4% (Figure 3-8). Prices were contained and inflation was 4.2% in 2020, compared with 5.6% in 2019. The budget deficit deteriorated to 6.3% of GDP in 2020 from 1.4% in 2019 due to lower tax revenues and increased public spending linked to the COVID–19 pandemic. The current account deficit deteriorated to 3.5% of GDP in 2020, compared with 2.3% in 2019, because of a drop in exports, an abrupt halt in tourism, and a decline in foreign direct investment.



Source: Data are as of December 2020 and are from domestic authorities; figures for 2020 are estimates and figures for 2021 and 2022 are projections by the African Economic Outlook team.

Figure 3-8: Economic trends and outlook for Madagascar 2019 to 2022[68].

3.3.1.3 Republic of Mauritius

The strong and abrupt response by the Government of Mauritius to contain the spread of COVID-19 disrupted economic activities and had a significant impact on output.

The tourism industry, which typically contributes 24% of GDP and accounts for 22% of employment with significant spill over into the island's entire economy (construction, transport, agriculture, wholesale and retail trade, and administrative and support services), was subject to an estimated 75% loss in value added. Exports of seafood, textiles and apparel, and sugar were also impacted by disruptions in global demand and a near threefold increase in the cost of shipping. The financial services sector however registered a growth of 1.1%, as did the information and telecommunication sector, due to heavy use of technological and teleworking services during lockdown.

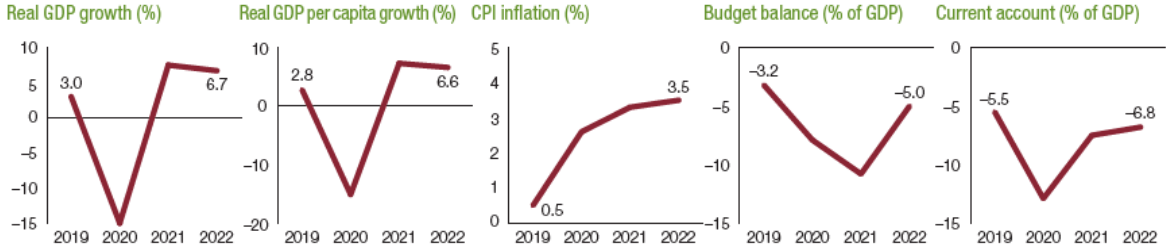
There was an increase of 53% in public expenditure coupled with lower tax receipts because of the economic downturn. This led to a doubling of the fiscal deficit to about 8% in 2020 from 3.2% in 2019. The government provided social support to cushion the fall in GDP during the first quarter of 2020 and

[67] IMF (2021) Republic of Madagascar: Request for a 40-Month Arrangement under the Extended Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Republic of Madagascar, https://www.imf.org/en/Countries/MDG

[68] ADBG (2021) African Economic Outlook: From Debt Resolution to Growth: The Road Ahead for Africa.

to help protect jobs. The packages aimed to stimulate domestic demand and provide direct social support to the most vulnerable to provide short-term stabilization, to sustain the economy during the pandemic.

Real GDP was estimated to contract by 15% in 2020, against positive real GDP growth of 3% in 2019, resulting in an 18-percentage points reduction in growth (. The current account deficit widened to 12.9% due to the decline in export and tourist receipts. Inflation more than tripled, to 2.5% in 2020 from the pre-pandemic low of 0.5%. The inflation was due to both an increase in the prices of imported products and the depreciation of the rupee. Despite government support, unemployment doubled in the third quarter of 2020 to 10.9% from 6.7% a year earlier. Poverty reportedly remained contained because the government decided to increase the level of existing social protection schemes, with priority given to the most vulnerable segments of the population.



Source: Data are as of December 2020 and are from domestic authorities; figures for 2020 are estimates and figures for 2021 and 2022 are projections by the African Economic Outlook team.

Figure 3-9: Economic trends and outlook for Mauritius 2019 to 2022[69].

3.3.1.4 Republic of Seychelles

The Seychelles economy is principally comprised of two key sectors: tourism and fisheries. GDP was expected to grow by 3.3% in 2020 due to the expansion of the information technology sector and tourism[70]. As tourism globally came to halt, the impact of the COVID-19 pandemic on the Seychelles economy contracted by an estimated 12% in 2020, after growing 4.7% in 2019 (see Figure 3-10).

The pandemic affected both tourism and fisheries, which then had a ripple effect throughout the entire economy. Hoteliers were running at a loss with significant overheads, staff layoffs and empty beds. There were only 75,000 visitor arrivals in the first three quarters of 2020, equivalent to a drop of almost 83 per cent from 2019.

The island nation's reliance on narrow economic bases has exposed its extreme vulnerability to external shocks such as this global pandemic. The tourism sector is the mainstay of the economy, contributing over 80 per cent to GDP and employing over 25 percent of the country's working population. In 2019, visitor arrivals to the Seychelles totalled 384,204, surpassing the 4 per cent target set by the Seychelles Tourism Board, which is more than three times the islands' population.

The fisheries sector is also crucial, employing 17 per cent of the population, thereby making important contributions to the economy and the export market, income and livelihoods.

[69] ADBG (2021) African Economic Outlook: From Debt Resolution to Growth: The Road Ahead for Africa.
[70] Information retrieved on 08th December from the Ministry of Finance website, http://www.finance.gov.sc/uploads/national_budget/BUDGET_AMENDMENT_2020_PART_1.pdf

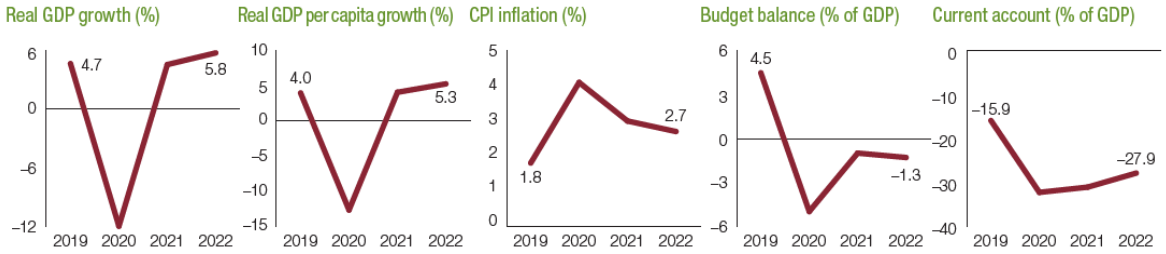
Foreign exchange inflows dropped from USD 3 million per day in 2019 (and 2020 prior to COVID-19) to between USD 0.5 and 2 million per day from April 2020. The current account deficit nearly doubled from 16.1 percent of GDP in 2019 to 29.6 percent of GDP in 2020. Growth was also affected by falling household consumption and investment performance due to the pandemic. Meanwhile inflation rose to 4.1% in 2020 from 1.8% in 2019.

As social expenditures increased to mitigate the impact of the pandemic, tax collections declined in 2020, and the tax-to-GDP ratio reached 27%, below the average of 32% over the previous five years, creating a fiscal deficit of 5.0% of GDP, compared with a surplus of 4.5% in 2019.

Lower export and tourism earnings contributed to a widening of the current account deficit to 32.3% in 2020 from 15.9% in 2019. The reduction in tourism revenues decreased foreign exchange reserves to $563 million in December 2020 from $580 million in 2019. There was downward pressure on the exchange rate that depreciated the value of the Seychelles rupee.

Income from the purse seine and long line tuna fishery provided the main economic buffer during the pandemic, surpassing tourism. The industrial fishing sector maintained a stable and important foreign exchange revenue stream both on account of the revenues of the logistics service providers as well as from the export of canned tuna. The industrial fishing sector has also helped keep many Seychellois in productive employment within the tuna logistics services.

Seychelles has been innovative in the approaches taken to tackle debt since defaulting on international debt payments a decade ago. The target was to achieve a debt-to-GDP ratio below 50% by 2021, from 150% at the peak. The country was on track until the pandemic when increased borrowing meant debt reached 85% of GDP in 2020, from 57% in 2019. In May 2020, the IMF approved a request from Seychelles for emergency financial assistance under the RFI (US $31.23 million), and further support was provided by the World Bank ($15 million), and the African Development Bank ($10 million). The AFBD (2021) report recommended the need for expenditure rationalization and revenue mobilization by widening the tax base (30 companies account for 80% of total tax collection), and economic and market diversification and improvements in the business environment to attract investment.



Source: Data are as of December 2020 and are from domestic authorities; figures for 2020 are estimates and figures for 2021 and 2022 are projections by the African Economic Outlook team.

Figure 3-10: Economic trends and outlook for Seychelles 2019 to 2022[71].

3.3.2 Livelihoods

The spread of COVID-19 has devastated both the lives and livelihoods of millions of people globally. On the WIO-islands, as visitor numbers came to an abrupt standstill, the livelihoods of people involved

[71] ADBG (2021) African Economic Outlook: From Debt Resolution to Growth: The Road Ahead for Africa.

in the tourism sector crumbled, which had a ripple effect across other supporting sectors that supplied the tourism sector, including fisheries, agriculture, administration and support services including taxi and car hire businesses. Artisans, local entrepreneurs and other types of shop and business owners were also impacted, increasing the number of households affected.

In Madagascar, a survey conducted by the MIHARI (Madagascar Locally Managed Area Network) project indicated that there was severe disruption across the entire fisheries value chain. The quantity of products sold declined due to the closure of hotels, temporary shutdowns and restriction of movement between regions, which resulted in a reduction in price of goods. The price of fish fell by at least 50% in all regions of Madagascar, and which was due to decreased demand and restrictions on the transport of products to the local and international market (export). The cost and limited means of storage of products also presented major constraints. This meant collectors-exporters and wholesalers sold their products at lower prices, in order to secure the sale, which impacts at the local level with a reduction in prices achieved by fishermen.

A survey revealed that the frequency of fishing decreased by 81% as collectors / fishmongers reduced the amounts purchased. The reduction in fishing effort resulted in a reduction in the availability and destination of the products. Some fishermen migrated to a specific fisheries, targeting the species that were still being purchased (e.g., many fishermen stopped fishing for crabs).

Almost all households surveyed declared a drop in their income during the confinement, due to:

- Decrease in the quantity of fish sold (62%)
- Decrease in the selling price of fish on the market (42%) or,
- Lack of alternatives as a source of income (13%)

COVID-19 also impacted the budget of the households surveyed: 87% of households said they are spending more than usual despite the drop in their income due to price inflation. 27% of households also had to take out loans and only 10% of households manage to save.

During COVID-19, in the Velondriake Locally Managed Marine Area (LMMA) in Madagascar, community members reliant on fishing as their sole income suffered from disruption to seafood markets. Communities with alternative incomes from aquaculture were less impacted as the products produced had a more secure value chain that was less affected by disruption during the early stage of the pandemic. Communities who relied heavily on tourism also adapted to the loss of income by returning to fishing, and those who had lost jobs in the cities returned to their coastal communities to live with and support their families[72].

In Mauritius, the stringent measures put in place to contain the spread of the virus had a direct effect on accommodation and food services, textile and other manufacturing sectors, as well as agriculture, wholesale and retail trade, due to the indirect linkages and dependency upon the hard-hit sectors, mainly tourism. Some sectors such as construction were also hit because of the interruptions and a downward turn in investment.

In Mauritius and Rodrigues, the Government intervened to prevent the loss of jobs through the "Tourism Alternative Livelihood Schemes" to help protect the employees of private companies that were facing

[72] https://blueventures.org/new-research-exploring-the-recipe-for-community-resilience-to-covid-19/

the prospect of no-income as a result of the border closure. Fishing activities ceased during the strictest lockdowns. Illegal fishing activities reportedly increased, as those who were previously involved in tourism sector entered the fishery to sustain their families.

In Seychelles, as the tourism sector collapsed, fisheries and other supporting industries suffered, with redundancies in food services, accommodation, administrative and support services such as car rental and taxi services[73]. In the third quarter of 2020, the national unemployment rate was recorded at 4 per cent. A new category called 'not employed' was added to the labour force status categories, to classify those whose work has stopped, as a result of the COVID-19 pandemic. It was estimated that unemployment would have reached 6.5 per cent if those affected by the COVID-19 situation had not started seeking alternative employment. The one sector that was not affected was the tuna fishing industry. This sector outperformed pre-COVID levels, replacing tourism in the short-run as the main source of foreign exchange revenue.

To cushion the artisanal fisheries sector the Seychelles Fishing Authority put in place an emergency plan for three months to guarantee local fish supply and also protect the livelihoods of about 1,500 fishermen. Some fishermen were not able to sell their catches, as tourism establishments and demand from fish processors declined significantly due to reduced activities and closure of some businesses. As part of the emergency plan, fishermen were guaranteed a fixed price for their catch from fish processors. Other incentives in place included a reduction in prices of ice and bait. Moreover, under the Fisheries Development Fund, a credit facility aimed at improving the financing opportunities for local investors to participate in long-line ventures and add value for the fisheries sector, the interest rate was reduced from 3 per cent to 1 per cent. Additionally, the Seychelles Trading Company (STC), which is fully owned by the Government and the major importer of consumer goods, purchased from fish processors and sold to the population at affordable prices. The average catch of demersal (deep-sea) fish is 400 tons a month, 50 per cent of which was sold to hotels and restaurants and the other 50 per cent on the local market.

3.3.3 Poverty

Poverty has reportedly increased across the WIO-islands during the pandemic as a result of local confinement measures and international border closures.

In Comoros, the poverty rate, measured at USD 3.2 per day per capita (2011 PPP), was 37.0% in 2014 and expected to decline. Poverty rates remain high as does income inequality with a Gini index of 38.8%. Gender inequality continues to prevail, particularly in the conduct of public affairs. This is most evident in Parliament, where 94% of the members are men; and in the labour market, where women's participation is only 50% of the rate for men.

Pre-covid close to 75% of people in Madagascar were estimated to be living on less than $1.90 per day as of 2019. While poverty rates have decreased since the last official statistic in 2012 (when 77.6% were living in poverty in Madagascar), this remains one of the highest poverty rates in the world. During COVID-19, poverty has increased, disproportionately affecting urban populations. So far, in

[73] Seychelles News Agency website, SNA http://www.seychellesnewsagency.com/articles/ 13704/Job+losses+in+Seychelles+this+year+reach+nearly+%2C%2C+most+in+tourism+sector

Madagascar, the pandemic has evolved into a more social and economic crisis than a health crisis. This is what emerges from the investigation into the impacts of Covid-19 on the Malagasy labour market.

In Mauritius, poverty rates have declined as the economy has diversified. However, poverty still exists particularly on the island of Rodrigues where it is estimated that 40% of the population live in extreme poverty. On both Mauritius and Rodrigues, those living in extreme poverty are often in female headed with limited opportunities for employment in the formal sector. During the pandemic, vulnerable households and marginalized groups whose income was already low or erratic pre-covid, such as those with informal part-time jobs, or working in fishing and construction, were particularly ill-equipped to cope with confinement measures. With no cash reserves, these types of households were not able to stockpile food for their families. In Rodrigues, there was a collective decline in the purchasing power of the local community, in parallel with an increase in the price of basic food items and medicines, which occurred in combination with a depreciation of the Mauritian rupee. The local government authority had to intervene to control the price of basic food stuff on the local market.

In Seychelles, extreme poverty was reported to be 1.1 percent using the global mark of $1.90 per day, whereas moderate poverty is reported at 2.5 percent, using the global mark of $3.10 per day. This poverty rate puts Seychelles among the lowest in the world among nations that are not part of the 35-member Organization for Economic Cooperation and Development (OECD). A survey conducted by the National Bureau of Statistics (NBS) in 2013 and published in 2015, revealed that 39.3 per cent of the Seychelles population were living below the established national poverty line of SCR 3,945 per adult equivalent per month, equivalent to roughly $300 per month or $10 per day. Like Mauritius, these are often female-headed households. However, because the unemployment rate rose in 2020 the poverty rate is also likely to rise.

3.3.4 Gender

The pandemic and strict containment measures such as lockdowns, movement restriction and school closures has had profound impacts and accentuated existing vulnerabilities faced by women and girls.

The WHO conducted a preliminary analysis on gender specific epidemiological data from 28 Africa countries that showed women accounted for a smaller proportion of COVID-19 infections and deaths[74]. In Seychelles, for example, the case fatality ratio was 0.1% women versus 0.5% for men, despite the fact that women account for a large part of the health workforce, putting them at higher risk of infection. Studies have suggested that such differences may be due to biological, behavioural or social factors, or because men are significantly more likely to suffer severe effects of COVID-19 and more likely to have pre-existing conditions, explaining the slightly lower fatality rate seen in women.

The pandemic has however had other impacts on women's health. There has been an increase in maternal deaths reported in Comoros, and a decline in births in health facilities and an increase in complications due to abortions.

Violence against women, and particularly domestic violence, also increase in other countries across Africa as security, health, and financial worries created tensions and strains which were worsened by the confined living conditions of lockdown.

[74] World Bank (20201) Fewer COVID-19 cases among women in Africa: WHO analysis (04 March 2021). https://www.afro.who.int/news/fewer-covid-19-cases-among-women-africa-who-analysis

In Madagascar, the pandemic has encouraged young women to enter prostitution due to the lack of work and to support the family. Insecurity and violence against women and children has also increased. In short, the rates of violence within households have really increased due to the prevailing poverty and unemployment.

In Mauritius there was an increase in incidents of domestic violence by 33%, with 93% of the cases perpetrated against women, most which were not officially reported to authorities. A similar set of circumstances has occurred in Seychelles, although again there

Women have also been disproportionately affected economically as more women have informal or part-time employment, with limited social safeguards. The informal sector jobs have been particularly hit by the pandemic (see Section 3.3.4).

3.3.5 Culture

The COVID-19 pandemic has curtailed the cultural life of the islands and led to restrictions on normal day to day activities and the cancellation of major cultural and national events on all the islands. For example, in Comoros, religious gatherings and festivals were banned. In Seychelles, the Creole Festival, National Day, the 250th Anniversary of the First Settlement and participation in international sports activities were all cancelled. In Mauritius, the normal leisure activities, religious festivals, wedding ceremonies, get-togethers, concerts, window-shopping, participating or watching sports, football, horseracing, visiting beaches and gyms and exercise classes, were all closed, and instead people were confined to their households, with TV and internet as the main leisure activities.

In Madagascar, sanitary measures, confinement, fear of contamination by the corona virus has negatively impacted the family relationship and the tradition of Malagasy hospitality. Funeral vigils for families and visits to offer condolences have been abandoned by most Malagasy people. Many traditions have been temporarily abandoned. Churches and places of worship have been closed to stop the transmission of the virus. Schools and universities were also closed, which impacted pupils and students.

3.4 Environmental Impacts

Key informant responses to the questionnaires identified that the pandemic had a two-pronged impact on the environment of the WIO-islands, both positive and negative, some responses are captured below:

3.4.1.1 Positive Impacts

The closure of international borders and national lockdown measures meant that there was a reduction in human activities, and this was generally considered to have had a positive impact on the environment.

In Seychelles, there was an overall reduction in human-induced physical impacts on biodiversity due to the drastic reduction in lower visitor numbers, which allowed nature time to breathe. Fewer tourists reduced pressure on the marine resources. As a result, some ecosystems, and heavily visited coastal areas have had some time to regenerate, and some people have also realised that nature is important.

In Mauritius and Rodrigues, during the strictest containment measures no one was allowed out of the house including fishermen, which lessened the physical impacts on sensitive habitats and poaching. The

amount of waste and solid debris entering the sea from land greatly reduced. The implementation of Tourism Alternative Livelihood Scheme by the local government engaged tourism operators in conservation works, led by local NGOs. The works included coral outplanting and cleaning of beaches and coastal areas. People became more aware of the amount of waste they produced, especially following curfews. On Rodrigues sensitization campaigns were run on waste segregation, and there was increased interest in organic (bio) farming, and the prospect of cultivating food at home using less fertilisers. More people also became interested in renewable energy, which has also been supported by the provision of subsidies for Solar Water Heater scheme and Solar PV panel.

3.4.1.2 Negative Impacts

Feedback from key informants revealed a range of negative impacts of the pandemic on biodiversity and conservation management projects and programmes. Biodiversity conservation organisations, both governmental and non-governmental, struggled to continue normal operations during the pandemic. Field staff and maintenance staff could not access key sites, so were not able to carry essential tasks such as collecting samples, monitoring or maintenance works. There were difficulties recruiting staff and getting volunteers from abroad. The travel restrictions and lack of flights meant that it was difficult to get volunteers and staff into the country from overseas, and there were also delays in the administrative procedures to get work access permits.

There were direct impacts to funding availability for biodiversity protection, conservation and restoration activities and general uncertainty about the future security of such sources. The economic crisis that unfolded because of the pandemic meant that less funds were available at the government level for biodiversity conservation as there are other competing priorities (in the public health domain and for social assistance for people who have lost their jobs). The reduction in tourist numbers reduced the income available from external sources for protected area management (e.g., loss of entrance fees to protected areas, payments from businesses towards organisations managing protected areas).

Non-governmental organisations also expressed concerns about their key sources of funding, particularly those linked to tourism and Corporate Social Responsibility (CSR) / Environmental Social Governance (ESG) funds. Companies abruptly cut-off these funding schemes due to cash-flow concerns with reduced visitor numbers. There was also hesitation or a lack of willingness among private foundations and private companies to commit to future funding due to economic uncertainties. NGOs expressed concerns about the potential declines in regular funding in the coming years.

The difficult financial and economic situation among the local communities encouraged more illegal fishing and poaching to sustain their livelihoods, which negatively impacted biodiversity. To a lesser extent, there were reports of increased poaching during lock down periods, but this trend was not sustained.

Lockdowns have also hampered the implementation of ecosystem restoration projects. In Mauritius, the movement restrictions, confinement orders and curfews meant that it was not possible to conduct maintenance works at conservation sites and at in-situ coral nursery sites. There was a noticeable increase in the growth of macroalgae in the lagoons, although the cause of this remains unknown. In Rodrigues, the loss of jobs and income resulted in an increase in illegal fishing activities.

3.5 The Impact of COVID-19 on Aichi Biodiversity Targets and SDG14 Targets

At the tenth meeting of the Conference of the Parties (COP10) to the Convention on Biological Diversity (CBD), held from 18 to 29 October 2010, in Nagoya, Aichi Prefecture, Japan, State Parties adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets (ABT), for the 2011-2020 period.

It is important to note that the CBD Strategic Plan for Biodiversity is intended to provide an overarching international framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system and all other partners engaged in biodiversity management and policy development.

Agenda 2030 agreed the Sustainable Development Goals (SDGs), and these are one of the leading initiatives for addressing the critical, complex and often inter-related issues of our world. One of the targets, SDG 14 Life below water, focuses on the ocean, estuaries, rivers and watersheds, and the human systems with which they intersect.

Member states use Voluntary National Reports (VNRs) as one of the main follow-up and review mechanisms for the 2030 Agenda for Sustainable Development. These national reviews are expected to serve as a basis for the regular reviews by the high-level political forum (HLPF), meeting under the auspices of ECOSOC.

In the following sections, progress in reporting on the Aichi Biodiversity Targets and SDG14 Targets is considered first, drawing upon the information provided in the national reports. The second section attempts to tease apart impacts of the pandemic on progress towards the ocean related Aichi Biodiversity Targets and SDG14 Targets.

3.5.1 Progress in reporting on Aichi Biodiversity Targets and SGD14 targets

3.5.1.1 CBD National Biodiversity Strategies and Action Plans and National Reports

Parties to the CBD are required to provide two key reference documents: the National Biodiversity Strategies and Action Plans (NBSAP) and the National Reports (NR) in which the countries report on progress towards the targets in the NBSAP. These documents are intended to provide a common and transparent framework for national biodiversity stakeholders to work towards a shared vision and can help mobilise resources. At COP10 Parties agreed to translate the Strategic Plan for Biodiversity 2011-2020, including the Aichi Biodiversity Targets, into revised and updated NBSAPs within two (2) years.

All WIO-islands are Party to the CBD, and all completed the revision and submission of updated NBSAPs aligned to the Strategic Plan. All NBSAP were submitted within two years of one another, with the earliest submission date being in 2015 (Seychelles) and the latest submission being in 2017 (Mauritius). Comparison of the WIO-islands submittal dates with those of other countries internationally, reveal that the WIO-islands were by no means as late as some other countries (with the latest submittal date being July 2021).

The duration (i.e., period of validity) of the WIO-islands NBSAPs vary. The NBSAPs for Comoros and Seychelles concluded in 2020, in line with the 2011-2020 Strategic Plan for Biodiversity. By comparison, the plan duration of the NBSAPs for Madagascar and Mauritius continue beyond 2020 for

another 5 years to 2025, appreciating the time involved in preparing and negotiating these documents and also the need to align timelines with other national strategies or plans.

All the WIO-islands completed the submission of the 5th National Reports (5NR) and their 6th National Reports (6NR). The 5NRs were due to be submitted to the CBD by 31 March 2014 and were to focus on the implementation of the 2011-2020 Strategic Plan and progress achieved towards the Aichi Biodiversity Targets (Decision X/10 of COP10). The most recent 6NR were due 31 December 2018 (Decision XIII/27) pre-COVID. Comoros and Madagascar both submitted their report in 2018, followed by Mauritius in 2019, and Seychelles in 2020.

For the 6NR, Parties were encouraged to use the online reporting tool, available on the Clearing-House Mechanism to prepare and submit their reports[75,76]. Only Mauritius used the online Clearing-House Mechanism for the preparation of the 6NR, whereas Comoros, Madagascar and Seychelles submitted their reports online using the standard templates provided.

The preparation of NRs and NBSAPs is a complex process that requires access to technical experts with an in-depth knowledge of the local biodiversity, support for carrying out stakeholder consultation processes, further support for inter-ministerial government-level consultations and approvals, all of which requires time and resources. The negotiations for the post-2020 Global Biodiversity Framework (GBF), which have already been delayed by a year, will result in a set of new targets and indicators. The implications are that the WIO-islands will need to revise and update their NBSAPs to align with the new GBF and then commence reporting on a new set of targets and indicators in a post-COVID environment. This will require additional input and resources, which may be more challenging than before COVID.

[75] https://chm.cbd.int/?schema_s=nationalReport6&hostGovernments_REL_ss=E0006E60-E0D9-4196-855F-8456F0C38690

[76] The 6NR Information Portal provided documents and guidance for preparing the 6NR together with a User Manual, and other resources:

- BIP Indicators Dashboard which serves a total of 15 indicators providing at least one indicator for tracking progress on Aichi Biodiversity Targets 1, 4, 5, 10, 11, 12, 13, 15 and 19. All indicators can be flexibly visualized at global, regional and national scales. https://www.bipindicators.net/
- UN Biodiversity Lab an online platform, which allows users to access global data layers, upload and manipulate datasets, and query multiple datasets to provide key information on the Aichi Biodiversity Targets and nature-based Sustainable Development Goals. ttps://unbiodiversitylab.org/
- The Bioland Tool aims at overcoming these barriers by providing a turnkey solution that can be used by any developing country to rapidly establish a basic operational national CHM website that can effectively facilitate the implementation of its NBSAP. https://demo.chm-cbd.net/
- The InforMEA Initiative brings together Multilateral Environmental Agreements (MEA) to develop harmonized and interoperable information systems for the benefit of Parties and the environment community at large. InforMEA harvests COP decisions and resolutions, news, events, MEA membership, national focal points, national reports, and implementation plans from MEA secretariats and organizes this information around a se of agreed terms. The initiative develops harmonized and interoperable information systems for the benefit of Parties and the environment. https://www.informea.org/en/countries
- The Integrated Biodiversity Assessment Tool IBAT is a web-based mapping and reporting tool used by companies, governments, researchers, and financial institutions to access global biodiversity datasets with which to make better decisions around the environment. IBAT Country Profiles deliver nationally relevant data that are disaggregated from global datasets, to support conservation planning and reporting. It presents information on species from The IUCN Red List of Threatened Species™, Protected Areas from the World Database of Protected Areas (WDPA) and on Key Biodiversity Areas (KBAs) from the World Database on Key Biodiversity Areas. https://ibat-alliance.org/

3.5.1.2 Progress with Agenda 2030 Voluntary National Reports

All WIO-islands have completed VNRs, and the most recent to be completed by each country are as follows: Comoros (2020), Madagascar (2021), Mauritius (2019) and Seychelles (2020). The VNRs include official reports of progress towards the SDG targets, including the SDG14 targets.

3.5.2 Progress towards Aichi Biodiversity Targets and SGD14 targets

This section discusses progress made by WIO-islands toward the Aichi Biodiversity Targets and SDG 14 targets pre-pandemic and the identified impacts of the COVID-19 pandemic on progress since.

It is worthwhile noting that the duration of the NBSAP for both Comoros and Seychelles were 2020. For these two countries, efforts to deliver the national targets should have been completed before the COVID-19 pandemic took hold. The pandemic should therefore not have had any actual impact on progress in this regard. By comparison, the period of validity of the NBSAP for both Mauritius and Madagascar, however, continue until to 2025. The pandemic may therefore have impeded delivery with respect to the national biodiversity targets for these countries. By way of example, the Mauritius NBSAP included a mid-term review, which was due to take place in 2020. There are no records on the CBD website to indicate that this review took place. Furthermore, it is also worthwhile noting that not all the countries reported on all the SGD14 targets in their VNRs.

With these key points in mind, Table 3-4 presents progress towards the Aichi Biodiversity Targets and SGD14 ocean related targets pre-COVID, as reported by the countries in their 6NR and VNR, together with the impacts of the COVID-19 pandemic on progress, in terms of whether the impact was positive, negative, both positive and negative or no change.

More detailed information on the progress towards each of the targets, as reported by the WIO-islands in their 6NR and VNR is captured in Appendix 2. The tables in Appendix 2 present key elements of the text included in the 6NR and VNR so as to provide a glimpse inside these national reports, as a snapshot of the status pre-COVID.

In summary, while the WIO-islands had made progress towards the Aichi Biodiversity Targets and ocean related SGD-14 targets pre-COVID, progress has overall been limited:

- Two WIO-islands reported that they were on track with SDG Target 14.5 and Aichi Target 11 (Madagascar and Seychelles), with the MPA area coverage part, excluding other elements.
- Two WIO-islands reported that they were on track with SDG Target 14.c (Mauritius and Seychelles),
- Two WIO-islands reported they were on track with Aichi Biodiversity Target 17 (Mauritius and Seychelles) and,
- One WIO-island reported were on track with regards Aichi Biodiversity Target 18 (Seychelles).

For all other targets, the countries reported the current status as either “Progress towards the targets, but at an insufficient rate” or “No significant change” (see Table 3-4). There was also one report of “Moving away from target” (Seychelles) for Aichi Biodiversity Target 6.

Further discussion about the impact of the pandemic on progress towards these targets is presented in the following sections.

Table 3-4 Progress towards Aichi Biodiversity Targets (ABT) and SDG 14 Targets, pre-COVID as reported in the 6NRs and VNRs and the impacts of COVID-19 Pandemic on progress (see Appendix 2 for additional details about progress on the targets pre-pandemic).

KEY: Pre-COVID: NR = Not reported, ⇔ = no significant change, ⇗ = progress towards target but at an insufficient rate, ⇧= on track to exceed target, ⇩.
KEY Impact of COVID-19: ? = unknown / not reported, ⇩= negative impact, ⇧ = positive impact and, ⇔ = no change.

TARGET	PRE-COVID				Impact of COVID-19 pandemic on progress			
	COMOROS 6NR[77] & VNR[78]	MADAGASCAR 6NR[79] & VNR[80]	MAURITIUS 6NR[81] & VNR[82]	SEYCHELLES 6NR[83] & VNR[84]	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
ABT 8 (SDG 14.1)	⇔	⇗	⇗	⇗	?	⇩	⇧ ⇩	⇧ ⇩
ABT 11 (SDG 14.5) Area	⇔	⇧	⇔	⇧	?	⇩	⇩	⇔
ABT 11 – (SDG 14.5) Effectiveness	NR	NR	NR	⇗	?	⇩	⇩	⇩
ABT 11 (SDG 14.5) Equitably	NR	NR	NR	NR	?	?	?	?
ABT 11 – (SDG 14.5) Ecologically representative	NR	NR	NR	NR	?	?	?	?

[77] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[78] Government of Comoros (2020) Rapport National Volontaire De L'union des Comores Au Forum Politique De Haut Niveau Sur Le Developpement Durable Edition 2020
[79] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[80] Government of Madagascar (2021) Deuxième Rapport de Madagascar Pour L'examen National Volontaire Sur Les Objectifs De Développement Durable 2021
[81] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[82] Government of Mauritius (2019) Voluntary National Review Report of Mauritius 2019
[83] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.
[84] Government of Seychelles (2020) Voluntary National Review 2020 Republic of Seychelles.

TARGET	PRE-COVID				Impact of COVID-19 pandemic on progress			
	COMOROS 6NR[77] & VNR[78]	MADAGASCAR 6NR[79] & VNR[80]	MAURITIUS 6NR[81] & VNR[82]	SEYCHELLES 6NR[83] & VNR[84]	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES
ABT 11 (SDG 14.5) Connectivity	NR	NR	NR	NR	?	?	?	?
ABT 11 (SDG 14.5) OECM	NR	NR	NR	NR	?	?	?	?
ABT 6 (SDG 14.7)	↗	↗	↗	↓	?	↓ ↑	↓ ↑	↓ ↑
ABT 19 (SDG 14.a)	↔	↗	↗	↗	?	↓	↓	↓
SDG 14.c	NR	NR	↑	↑	?	↓	↓	↓
ABT 3	↗	↗	↗	↔	?	↓	↓ ↑	↓
ABT 10	↗	↗	↗	↔	?	↓	↑	↓ ↑
ABT 17	↑	↑	↗	↑	?	↓	↓	↓
ABT 18	↔	↗	Not applicable	↑	?	↑	Not applicable	↔

3.5.2.1 Aichi Biodiversity Target 8 and SDG 14.1

Pre-COVID, three of the WIO-islands reported progress towards Aichi Biodiversity Target 8, but at an insufficient rate, while one country reported no significant change.

Three out of the four WIO-islands have made progress pre-COVID in terms of the introduction of regulations and standards for permissible effluents, chemical imports, such as pesticides, and solid waste management, including bans on the import and use of plastics (Mauritius and Seychelles)[85] (see Appendix 2). In reality, however, there is limited capacity to monitor, control and enforce these regulations. The lack of regular monitoring of general ambient environmental quality, water quality and solid waste within the WIO-islands means that there is limited to no data on these key indicators.

During COVID there were various anecdotal accounts from the WIO-islands which could be interpreted as positive or negative impacts of the pandemic progress towards Aichi Biodiversity Target 8. For example, there are accounts that the drop in tourist arrivals had positive impacts on waste production and pollution, which could be interpreted as a positive impact on the environment (Mauritius and Seychelles). With fewer tourist arrivals, the consumption of goods and services would drop, which would reduce the generation of waste and pollution from tourist related businesses. Similarly, there were also anecdotal accounts to indicate there was a reduction in the quantities of solid waste entering the marine environment around the WIO-islands during the COVID-19 pandemic. Substantiating these types of anecdotal accounts is however more problematic without regular monitoring data.

In Mauritius, key informants indicated that the lockdowns increased the amount of solid waste generated from households, whereas waste produced by businesses and other sectors had decreased considerably, which meant people were more aware of the waste they produced, leading to a shift in behaviour towards waste management and recycling.

3.5.2.2 Aichi Biodiversity Target 11 and SDG 14.5

Pre-COVID, two of the WIO-islands reported that they were on track to exceed the Aichi Biodiversity Target 11 while two countries reported no significant change (Table 3-4).

The WIO-islands are implementing a combination of spatial and temporal management approaches to address the Aichi biodiversity targets and the SDG goals, including different types of MPAs.

Table 3-5Table 3-5 shows the national MPA coverage and total MPA coverage for the WIO-islands, which collectively covers 7.4% of the combined EEZ, marginally higher than within the wider WIO region (7%)[86]. Both Seychelles and Madagascar have exceeded the 10% protected area coverage target (Aichi Biodiversity Target 11 or SDG14.5), whereas both Comoros and Mauritius have not.

Table 3-5 Marine Protected Areas statistics for the WIO-islands[87]

	COMOROS	MADAGASCAR	MAURITIUS	SEYCHELLES	TOTALS
EEZ (km²)	160,000	1,147,712	2,300,000	1,336,559	4,944,271

[85] The local government authority responsible for the island of Rodrigues (the Rodrigues Regional Assembly RRA) was the first to implement a ban on the use of plastic bags in 2013.

[86] UNEP-Nairobi Convention and WIOMSA. 2021. Western Indian Ocean Marine Protected Areas Outlook: Towards achievement of the Global Biodiversity Framework Targets. UNEP and WIOMSA, Nairobi, Kenya, 298 pp.

[87] UNEP-Nairobi Convention and WIOMSA. 2021. Western Indian Ocean Marine Protected Areas Outlook: Towards achievement of the Global Biodiversity Framework Targets. UNEP and WIOMSA, Nairobi, Kenya, 298 pp.

No. of existing MPAs	1	22	18	16	57
MPA area (km²)	449	14,451	139	353,663	368,702
% EEZ protected	0.28	11.04	0.01	26.40	7.4%
No. of Proposed MPAs	3	0	1	TBD	4
Proposed MPA area (km²)	180.9	0	97	50,000	50,277.9
Total potential % EEZ	0.39	11.04	0.01	30.00	8.4%

SOURCE: MPA Outlook

While SDG 14.5 provides a single indicator for tracking progress towards this target that relates to MPA coverage, Aichi Biodiversity Target 11 is in fact a composite of the following six indicators:

- Area
- Effectively
- Equitably
- Ecologically representative
- Connectivity
- Other effective area-based conservation measures

The WIO-islands do not generally currently report on these other elements of the Aichi Biodiversity Target 11 in their 6NR, nor does the 6NR specify this as a requirement. The majority of the MPAs have been assessed at one time or another using the Management Effectiveness Tracking Tool (METT), as this is a requirement of projects funded by the Global Environment Facility (GEF).

The WIO MPA Outlook assessed 18 MPAs using the METT, and all showed major deficiencies in management. The report identified that financial and human resources were generally inadequate, which contributed to the low enforcement capacity of managers and rangers.

During the pandemic, progress towards expanding MPA coverage may have been mildly impacted in the WIO-islands where these types of activities were ongoing but were put on hold as a result of the pandemic. This impact is likely to be temporary.

Before COVID both Seychelles and Madagascar were on track to exceed the 10% area coverage target. In Madagascar, the establishment of marine protected areas and LMMAs, and the implementation of the blue economy were slowed by sanitary measures and restrictions, immobilization of the administration. In Mauritius, a UNDP-GEF supported project entitled “Mainstreaming Biodiversity in the Republic of Mauritius” was suspended due to COVID-19. This project was anticipated to boost the protected area coverage, but because of COVID a no cost extension was requested and the project is due to be re-launched in 2021. In Comoros, there was no feedback provided about the impact of the pandemic on MPA coverage.

Progress towards improving the management effectiveness of MPAs was significantly negatively impacted, especially for those protected areas dependent on tourism revenue, and this impact is likely to extend into the mid to long term. In Mauritius, for protected sites where there are entry fees for visitors were negatively impacted. Conservation activities were constrained by restrictions put on movement. In Rodrigues, there were reports of increased illegal fishing within protected areas.

In Seychelles, protected areas are managed by government Seychelles National Parks Authority (SNPA), and other private and non-governmental organisations (e.g., Nature Seychelles, Island

Conservation Society, Seychelles Islands Foundation), which depend on entrance fees. The income for these protected areas was therefore significantly impacted. Donor financing from Corporate Social Responsibility (CSR), as well as other forms of donation were also reduced. The economic downturn and challenges within the private sector placed significant strain on the resources of these NGOs, and staff have had to be let go. NGOs that were reliant on volunteers have not been able to get them into the country, due to flight restrictions and quarantine costs. So staff shortages have been a serious and ongoing concern. These NGOs will potentially need restructuring, and there will be significant delays to project delivery and operations in general.

Encouraging countries to invest resources on establishing and implementing MPAs post-COVID is going to be challenging when there are other higher priorities. It is nevertheless essential for sustainability of coastal and marine resources in WIO-islands.

3.5.2.3 Aichi Biodiversity Target 6 and SDG 14.7

Pre-COVID, while the WIO-islands were making progress towards Aichi Biodiversity Target 6 or SDG14.7, none of the countries reported that they were on track to meet the targets. Three of the WIO-islands reported progress towards the target, but at an insufficient rate, while Seychelles reported a move away from the target in their 6NR. The WIO-islands have been preparing fisheries management plans to improve sustainable management of fisheries and introducing measures to control fisheries including the preparation of marine spatial plans (see Appendix 2). Key challenges include a lack of capacity for monitoring, control and surveillance, the need for more support for fisher communities to help them monitor and manage their fisheries and prevent damage caused by destructive fishing practices.

The pandemic appears to have both positive and negative impacts on progress towards Aichi Biodiversity Target 6 and SDG 14.7 in Mauritius, Madagascar and Seychelles.

In Mauritius, the movement restrictions put in place to contain the spread of the virus on the islands of Mauritius and Rodrigues included restriction on the movement of fishers, which meant that fishing activities were suspended during lockdowns. Both islands utilise closed seasons to regulate fisheries, including the seine net fisheries among others, and have more recently trialled the use of closed seasons for octopus. The lockdowns were in effect equivalent to temporary closed seasons, which could be perceived as beneficial to a wide range of stocks. There were however reports of poaching when lockdown measures eased, mostly due to loss of livelihoods and need to supplement lost earnings.

In Madagascar and Seychelles, fishers were allowed to continue to fish, but there were massive disruptions in the value chain that resulted from a drop in demand associated with reduced visitor numbers. In Madagascar, there was insufficient storage capacity within the wholesale market, so products were sold on at a reduced price, which then impacted the incomes and livelihoods of the fishing communities. In Seychelles, the government intervened to stabilise the system through offering to purchase the catch at a standard rate. This meant fishers continued to fish and earn an income.

In Seychelles, an emergency plan was developed to cushion the Seychelles fisheries sector for three months to guarantee local fish supply and also protect the livelihoods of about 1,500 fishermen. Since the outbreak, some fishermen have not been able to sell their catch, as tourism establishments and demand from fish processors has declined significantly, due to reduced activities and closure of some

businesses. As part of the emergency plan, fishermen were guaranteed a fixed price for their catch from fish processors. Other incentives put in place included a reduction in prices of ice and bait. Moreover, under the Fisheries Development Fund, a credit facility aimed at improving the financing opportunities for local investors to participate in long-line ventures and add value for the fisheries sector, the interest rate is being reduced from 3 per cent to 1 per cent. Additionally, the Seychelles Trading Company (STC), which is fully owned by the Government and the major importer of consumer goods, purchased good from fish processors and sold them to the population at affordable prices. Currently, the average catch of demersal (deep-sea) fish is 400 tons a month, 50 per cent of which was sold to hotels and restaurants and the other 50 per cent on the local market.

In Comoros, there was no feedback provided about the impact of the pandemic on fisheries management. Anecdotal accounts indicate that fishing activities continued through the pandemic.

3.5.2.4 Aichi Biodiversity Target 19 and SDG 14a

Pre-COVID none of the WIO-islands countries reported that they were on track to meet Aichi Biodiversity Target 19 and SDG 14a.

The COVID-19 pandemic has had a significant negative impact on research, with the travel restrictions in place. Teaching and education has also been impacted, national scientists have had their research disrupted due to lockdowns and travel restrictions. Many international research expeditions to the region have had to be put on hold. These delays will create further problems with funding cycles, as grants may need to be withdrawn if the projects are not delivered as per the original schedule.

3.5.2.5 SDG 14c

Pre-COVID two of the WIO-islands reported in their VNRs that they were on track to meet SDG 14c (Mauritius and Seychelles), while the other two countries did not report on progress towards this target (Comoros and Madagascar).

Mauritius has been implementing the provisions and adhering to the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas; and Agreement related to the Conservation and Management of Straddling and Highly Migratory, Fish Stocks of the United Nations Law of the Sea (Fish Stocks Agreement) of 1995.

Seychelles had signed four more legal acts of the International Convention for the Prevention of Pollution from Ships (MARPOL) in December 2019, committed to the Ellen MacArthur Foundation, and become a permanent member of the Plastic Waste Partnership under the Basel Convention, as well as the Ad Hoc Open Expert Working Group on Marine Litter and Microplastic, working with the UNODC's Global Maritime Crime Programme (GMCP), which is responsible for providing technical assistance to Seychelles to counter transnational organized crime at sea.

The COVID-19 pandemic has however negatively impacted many of these international processes, with many meetings either being post-poned or having to go virtual. This has slowed momentum in these important dialogues, including discussions related to UNLOS and BBNJs.

3.5.2.6 Aichi Biodiversity Target 3

Pre-COVID none of the WIO-islands had achieved Aichi Biodiversity Target 3. Three of the countries reported that progress towards target had been achieve but at an insufficient rate (Comoros, Madagascar and Mauritius), while Seychelles reported no significant change (see Appendix 2 for further details).

The COVID-19 pandemic had both positive and negative impacts on incentives and subsidies (see also SDG 14.7 above).

By way of an example, in Rodrigues, innovative beneficial payment for ecosystem services (PES) schemes have been implemented to lessen the impact of the border closures on tourism operators. Before the pandemic, the local government authority, the Rodrigues Regional Assembly (RRA) had previously used similar PES schemes to engage fishers in alternative livelihood activities during fisheries closed seasons. During the pandemic the PES scheme employed tourism operators in reef restoration and other activities to beautify the island.

In Seychelles, pre-pandemic, the 6NR mentions that perverse incentives had been identified in the fisheries sector and recommended for removal (these incentives relate to the fuel subsidy provided to artisanal fishers). During the pandemic, the drop in tourist arrivals impacted supporting industries including artisanal fisheries. The majority of artisanal fishers in Seychelles rely on local market demand, including hotels and restaurants, which were hard-hit by the outbreak of the COVID-19.

To stabilise the system and protect fisher livelihoods the Seychelles Fishing Authority (SFA) introduced as suite of measures[88] which included a reduction of the price of artisanal fishing tools, to help fishers cope with unpredictable fish and fish products' market conditions. This included a reduction in the price of bait, mostly used by the small-scale and artisanal fishers; and ice to influence the price of fish sold to processors and subsequently to consumers. While these measures would have benefited fishers, they could also be perceived as a perverse subsidy (similar to the fuel subsidy).

3.5.2.7 Aichi Biodiversity Target 10

Pre-COVID three of the four WIO-islands reported progress towards Aichi Biodiversity Target 10 but at an insignificant rate (Comoros, Madagascar, and Mauritius) and one reported no significant change (Seychelles) (see Appendix 2 for further details).

COVID-19 has had both been positive and negative impacts on vulnerable ecosystem as a result of biodiversity conservation work generally being significantly negatively impacted. Pressures on key biodiversity sites have been temporarily alleviated due to reductions in visitor numbers (national and international tourists), and less impacted as a result. However, this will be temporary unless polices are put in place to promote more sustainable tourism and control visitor numbers.

3.5.2.8 Aichi Biodiversity Target 17

Pre-COVID three out of four of the WIO-islands reported they were on track to achieve Aichi Biodiversity Target 17 (Comoros, Madagascar and Seychelles) and one country reported progress but at an insufficient rate (Mauritius) (see Appendix 2 for further details). The impact of the COVID-19 pandemic on progress towards this target has been negative as although all countries had submitted their

[88] https://www.seafoodsource.com/news/supply-trade/seychelles-moves-to-cushion-artisanal-fishers-from-covid-19-impacts

NBSAPs, implementation of the NBSAPs will have been impacted by the economic downturn, restrictions on movements, and the need for governments to invest in other priorities.

All countries submitted revised and updated NBSAP and National Reports. It has not been possible to further assess the impact of COVID on the implementation activities.

3.5.2.9 Aichi Biodiversity Target 18

Pre-COVID only one of the four WIO-islands reported that they were on track to achieve Aichi Biodiversity Target 18 (Seychelles), another country report progress towards the target but at an insufficient rate (Madagascar), while another reported no significant change (Comoros) and the remaining country did not report (Mauritius).

In Madagascar, traditional knowledge has been recognised in law. The 6NR recognises the importance of the "identification of", "use of" and "protection of" traditional knowledge and practices contributing to conservation and the sustainable use of biological resources. During COVID the government of Madagascar advocated the use of a traditional remedy called COVID-organics, although the effectiveness of the medicine remains unproven.

In Seychelles, the 6NR reports that Seychelles does not have indigenous peoples, but as a small country it endeavours to fully recognise the local communities and traditional knowledge that they hold.

3.6 The Impact of COVID-19 on ocean related negotiation processes

The year 2020 was meant to be the big year for biodiversity. As the COVID-19 pandemic started, major decision-making forums were optimistically postponed, then put on hold indefinitely as the virus spread around the world.

- 2020 UN Ocean Conference, the follow on from the first UN Ocean Conference in 2017, which aimed furthering SGD14 through science-based innovative solutions and starting a new chapter of global ocean action.
- 15th Conference of the Parties (COP) of the United Nations Convention on Biological Diversity (CBD), which will decide the Post-2020 Global Biodiversity Framework.
- Intergovernmental conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.
- 26th COP of the UN Framework Convention on Climate Change (UNFCCC).

The pandemic has however delayed these forums and resulted in a significant loss in momentum both in terms of realising the sustainable development goals and the ambitions for biodiversity and nature.

3.6.1 Impact on the Post-2020 Global Biodiversity Framework Process

Key informants from the WIO-islands were asked if the COVID-19 pandemic had constrained their participation in the identified opportunities for development of the post-2020 global biodiversity framework, and whether they had managed to engage in the indicated opportunities for which input into the process could be provided. Respondent results received are summarised in Table 3-6.

Table 3-6 Participation in the post-2020 global biodiversity framework intersessional meetings.

	Yes	No	Not sure
Has the pandemic constrained participation in the identified opportunities for development of the post-2020 global biodiversity framework?	●		
	Yes	No	Not sure
Participation in global, regional and thematic consultations during 2019-2020	●		
Participation in the meetings of the Open-Ended Intersessional Working Group (OEWG) on the preparation of the Post-2020 global biodiversity framework	●		
Participation in meetings of the CBD subsidiary bodies (Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), Subsidiary Body on Implementation (SBI) and the Ad-hoc Open-ended Working Group on Article 8(j) and Related Provisions) and expert meetings.	●		
Submission of views and/or substantive input/comments to the discussion documents on the post-2020 framework, as they are made available for consultation in the CBD post-2020 website.	●		
Convening of meetings/consultations, by interested Governments, organizations and stakeholders, on the post-2020 biodiversity framework and use the results of these discussions as a basis to inform their input to the formal process.	●		
Provision of human resources, technical and/or financial support, by interested Governments, organizations and stakeholders, for any part of the preparatory process.			●
Shared experiences and best practices as well as making pledges under the framework of Sharm El-Sheikh to Kunming Action Agenda for Nature and People.		●	
Intended participation in CBD COP-15, to be held in Kunming, China, in 2021.	●		
Participation in global, regional and thematic consultations during 2019-2020			
Participation in the meetings of the Open-Ended Intersessional Working Group (OEWG) on the preparation of the Post-2020 global biodiversity framework	●		
Participation in meetings of the CBD subsidiary bodies (Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), Subsidiary Body on Implementation (SBI) and the Ad-hoc Open-ended Working Group on Article 8(j) and Related Provisions) and expert meetings.	●		
Submission of views and/or substantive input/comments to the discussion documents on the post-2020 framework, as they are made available for consultation in the CBD post-2020 website.	●		
Convening of meetings/consultations, by interested Governments, organizations and stakeholders, on the post-2020 biodiversity framework and use the results of these discussions as a basis to inform their input to the formal process.	●		
Provision of human resources, technical and/or financial support, by interested Governments, organizations and stakeholders, for any part of the preparatory process.			●
Shared experiences and best practices as well as making pledges under the framework of Sharm El-Sheikh to Kunming Action Agenda for Nature and People.		●	
Intended participation in CBD COP-15, to be held in Kunming, China, in 2021.	●		

Source: Information note: Ways and means to contribute to the development of the post-2020 global biodiversity framework[89].

3.6.2 Impact on UNCLOS Biodiversity in Areas Beyond National Jurisdiction (ABNJ)

None of the key informants responded to this part of the questionnaires, it is therefore not known whether the countries participated in the inter-sessional meetings to support the process.

[89] https://www.cbd.int/doc/notifications/2019/ntf-2019-049-post2020-en.pdf

3.6.3 Key Respondent Comments on their involvement in these processes.

With the onset of the COVID-19 pandemic, physical in-person meetings were cancelled and either moved online or postponed. The virtual meetings presented a challenge to government staff due to:

- Poor internet connectivity and difficulties following the meeting
- The timing of meetings were often late in the evening to accommodate the time zones.
- Late meetings affected the level of participation and engagement, and productivity.
- The processes have dragged and lost the momentum.
- Few staff to attend virtual meetings, with multiple events happening at the same time.
- In person meetings present the opportunity for more engagement, and attendees are focussed on the subject matter, instead of being engaged in normal duties.
- In virtual meetings, the delegations have to split their time and level of engagement in the process.
- High risk of staff burn out as often the whole day is spent in the office followed by virtual meetings after hours, adding to workload.

3.7 SAMOA Pathway

The Samoa Pathway notes '*the ability of the small island developing States to sustain high levels of economic growth and job creation has been affected by the ongoing adverse impacts of the global economic crisis, declining foreign direct investment, trade imbalances, increased indebtedness, the lack of adequate transportation, energy and information and communications technology infrastructure networks, limited human and institutional capacity and the inability to integrate effectively into the global economy. The growth prospects of the small island developing States have also been hindered by other factors, including climate change, the impact of natural disasters, the high cost of imported energy and the degradation of coastal and marine ecosystems and sea-level rise'* (United Nations, 2014b, Para 17.124).

The pathway identifies the key issues to be addressed: mitigating climate change; shifting to more sustainable energy; build resilience to reduce vulnerability to disaster risk; improve the conservation and sustainable use of the oceans and seas; improve food security and nutrition; reduce the overexploitation of surface, ground and coastal waters, reduce saline intrusion; improve infrastructure for safe drinking water, sanitation, hygiene and waste management systems; develop viable sustainable transportation, consumption and production; better the management of chemicals and waste, including hazardous waste; improve health, and reduce the high prevalence of debilitating communicable and non-communicable diseases; promote gender equality and women's empowerment; foster social development, including culture, sport, education, peaceful societies and safe communities; protect biodiversity against desertification, land degradation, drought and reverse deforestation and forest degradation; and control against invasive alien species. The plan also highlights the importance of sustainable tourism.

The 2015 Sendai Disaster Risk Reduction Framework also highlights the disproportionate effects of disasters to SIDS (United Nations, 2015).

The impact of the COVID-19 Pandemic on progress towards the SAMOA Pathway based on the analysis of key documents and key informants responses are presented in Table 3-7.

Table 3-7 Impact of COVID-19 Pandemic on progress towards SAMOA Pathway.

Priority Actions	COVID-19 Impacts
Sustainable economic growth	COVID-19 and the associated restrictions has resulted in unprecedented economic recession and severely reversed progress towards sustainable economic growth. (see Section 3.1.1).
Climate change adaptation and mitigation	COVID-19 has potentially slowed climate change adaptation and mitigation efforts with lack of on-the-ground activities such as research and data collection (To be completed).
Biodiversity protection	COVID-19 had a two-pronged impact on biodiversity, with both positive and negative impacts being reported. National and international restrictions have reduced the level of human activity in the marine environment, allowing for a rest period and for natural regeneration. The lack of visitors, has impacted national budgets and other funding sources (e.g., CSR funds), and therefore negatively impacted on biodiversity protection. As a result there has been a reduction in income for protected areas, conservation workers (rangers, patrol officers etc.), and notably volunteer staff for NGOs. There have been reports of increased poaching, illegal fishing. See Section 3.4, Section 3.6 and Section 3.8
Improving human health and social development	The African region in general faces the double burden of communicable and noncommunicable diseases. Countries need to have systems in place for the timely procurement of supplies at a reasonable cost and in sufficient quantities to address treatment needs and efficiently complement important investments in health promotion. This is probably the most impacted priority action of the SAMOA pathway. COVID-19 has altered human health, exposed the vulnerabilities of the elderly and those with NCDs.
Partnerships among SIDS	Aside from the Nairobi Convention Secretariat, there are other regional organisations and multi-country Projects within the region that have forged partnerships and/or facilitated joint opportunities for knowledge creation, information sharing, training, capacity building between the WIO-islands. Examples of some of these regional project as are provided below: • Disaster Risk Management in the Islands of the Indian Ocean[90] • Sustainable Consumption and Production for SIDS Initiative (within the 10YFP)[91] • Integrated Water and Wastewater Resource Management in Atlantic and Indian Ocean SIDS[92]

[90] https://sustainabledevelopment.un.org/partnership/?p=7675
[91] https://sustainabledevelopment.un.org/partnership/?p=7516
[92] https://sustainabledevelopment.un.org/partnership/?p=11420

CHAPTER 4. Impacts on the implementation of key projects

4.1 Preamble

This chapter aims to examine the impact of the COVID-19 pandemic on key projects within the WIO-islands of Comoros, Madagascar, Mauritius and Seychelles, with a specific focus on the GEF-funded project '*Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIOSAP)*'.

4.2 Nairobi Convention

The Nairobi Convention is a part of UNEP's Regional Seas Programme, which covers 143 countries and 18 regions in total. The programme aims to address the accelerating degradation of the world's oceans and coastal areas through the sustainable management and use of the marine and coastal environment, by engaging countries in actions to protect their shared marine environment.

The Nairobi Convention is a partnership between governments, civil society and the private sector, working towards a prosperous Western Indian Ocean Region with healthy rivers, coasts and oceans. The Convention was first signed in 1985 and entered into force in 1996, and contracting Parties include Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, Tanzania and the Republic of South Africa. The Nairobi Convention provides a mechanism for regional cooperation, coordination and collaborative actions; it enables Contracting Parties to harness resources and expertise from a wide range of stakeholders and interest groups; and in this way it helps solve inter-linked problems of the region's coastal and marine environment.

The Nairobi Convention develops a biennial work programme for collaborative action, which is funded largely by the East African Trust Fund, by Governments and by partners/donors.. The Nairobi Convention Work Programme focuses on the promotion, facilitation, and implementation of the objectives of the Nairobi Convention in an integrated, mainstreamed, and cross-sectorial manner at the regional and national levels. The work programme is a partnership programme based on the priorities of the Western Indian Ocean countries, partner programmes, linkages between different environmental themes: socio-economic development issues as well as science and policy. Partnership meetings are held to guide the identification of regional priorities.

The Secretariat through Decision CP8/13 on Enhancing Cooperation, Collaboration and Support with Partners encourages collaboration and communication between Contracting Parties and civil society, private sector, non-governmental organizations, local governments and municipal authorities in the implementation of the work programme of Nairobi Convention for increased impact and commitment so as to harness the benefits of synergies and collaboration.

4.2.1 Partnerships and stakeholders

The Secretariat works closely with collaborating partners such as the "Consortium for Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean" referred to as the ("WIO-C")

membership, other regional NGOs and various national and research institutions. Established in 2006 the "WIO-C" is a partnership between major NGOs with the support of IGOs in the Western Indian Ocean. WIO-C is anchored in the Nairobi Convention, and is designed to improve information exchange, synergy and coordination between NGOs working on coastal and marine environment issues in the Western Indian Ocean region, and to move towards a joint programmatic approach in addressing these issues.

4.2.2 Legal Instruments

The Nairobi Convention was signed on Friday, June 21, 1985 and came into force in Thursday, May 30, 1996. The Nairobi Convention Secretariat held the Conference of Plenipotentiaries and the Sixth Conference of Parties (COP6) to the Nairobi Convention at the United Nations Environment Programme (UNEP) Headquarters at Gigiri in Nairobi Kenya, from 29 March to 1 April 2010, which considered and adopted the;

- Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities. Year adopted: Nairobi, 31 March, 2010. Parties: Comoros, France, Kenya, Madagascar, Republic of Mauritius, Mozambique, Republic of Seychelles, Somalia, the United Republic of Tanzania and Republic of South Africa.
- Amended Nairobi Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the Western Indian Ocean. Year adopted: Wednesday, March 31, 2010

4.2.3 Nairobi Convention Structure

The Nairobi Convention is composed of a Secretariat, a set of National Focal Points, the Partners of the Convention, expert groups/task forces, and the Regional Coordinating Unit (RCU). The Secretariat serves as the central administrator for the Convention and implementation of the work program.

The Conference of Parties (COP) is the main decision making body of the Convention, composed of experts form each country. The COP is convened every two years to review the implementation of the Convention and the Protocols (a smaller group, the Bureau of Contracting Parties, meets between COP meetings to address issues related to implementation of the Convention). The Bureau exercises decision-making powers on substantive issues related to implementation of the Convention and its protocols between ordinary meetings of the Contracting Parties, reviewing preparations for the ordinary and extraordinary meeting and providing guidance to the Secretariat of the Convention and making adjustments in the programme and budget as necessary. It is composed of The President, Vice-President and Rapporteur.

To address emerging issues in the region, the COP has also established expert groups and task forces, such as the Mangrove Network, the Coral Reef Task Force, Marine Turtle Task Force, the Forum for Academic and Research Institutes (FARI), and the Legal and Technical Working Group. Since the implementation of the Convention, there have been ninth COP meetings, with the ninth COP held in Kenya in 2018.

4.2.4 Nairobi Convention Projects

The Nairobi Convention Secretariat implements projects within the Western Indian Ocean region with funding from organizations such as GEF and the Governments of Norway and Sweden and in

partnership with other organizations such as Western Indian Ocean Marine Science Association (WIOMSA), Birdlife International, African Union (AU), Indian Ocean Commission (IOC), WWF and IUCN. The current ongoing projects being supported by the Convention include:

- WIOSAP: Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities
- SAPPHIRE: The Western Indian Ocean Large Marine Ecosystems Strategic Action Programme Policy Harmonisation and Institutional Reforms
- Ocean Governance: A Partnership project for Marine and Coastal Governance and Fisheries Management for Sustainable Blue Growth in the Western Indian Ocean
- ACP MEA Project: African, Caribbean, and Pacific (ACP) Countries Capacity Building of Multilateral Environmental Agreements (MEAs) project.
- NoCaMo: Integrated Management of the Marine and Coastal Resources of the Northern Mozambique Channel (NoCaMo) Project

4.3 Implications of the COVID-19 pandemic on Nairobi Convention Workplan

Following the onset of the pandemic, UNEP and the Nairobi Convention issued a Briefing Note[93] to alert partners and stakeholders to the likely impacts of the COVID-19 pandemic on the delivery of the Projects being supported by the Nairobi Convention.

The Briefing Note explained how activities and processes were likely to be impacted and presented an anticipated scenario with regard work in the WIO Region for the remainder of 2020 and beyond. The note explained that national restrictions measures will affect the implementation of both regional and national level activities in 2020; alerted Partners that UNEP and the Nairobi Convention Secretariat were making use of virtual means for communications, with face-to-face meetings and international travel on hold until at least 31 May 2020. The note also explained that this would delay Project implementation and the planning activities and events for this period and beyond.

Impacts on the WIOSAP Project are presented in Section 4.4 below:

4.4 WIOSAP Project

The GEF-funded project '*Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIOSAP)*'was designed to address priority issues within the WIO Region through the following Components:

- *Component A*: Sustainable management of critical habitats focuses on the protection, restoration and management of critical coastal habitats and ecosystems recognizing the enormous value of healthy critical coastal and marine habitats for the future well-being of people in the WIO region.
- *Component B*: Improved water quality focuses on the need for the WIO Region's water quality to attain international standards by the year 2035.

[93] UNEP/Nairobi Convention (April 2020) Briefing Note to Nairobi Convention Stakeholders Regarding the COVID-19 Pandemic.

- *Component C*: Sustainable management of river flows aims at promoting wise management of river basins in the region through implementation of a suite of activities aimed at building the capacity for environmental flows assessment and application in river basins of the region.
- *Component D:* Governance and regional collaboration focuses on strengthening governance and awareness in the WIO region with a view to facilitating sustainable management of critical coastal ecosystems and habitats.

The Project is designed to support the Contracting Parties (Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania and France (not project beneficiary) in the delivery of the United Nations 2030 Sustainable Development Agenda in general and specifically Goal (SDG) 14 with special focus on Targets 14.2 and 14.5.

The WIOSAP Project goal is '*to reduce impacts from land-based sources and activities and sustainably manage critical coastal and marine ecosystems through the implementation of the agreed WIOSAP priorities with the support of partnerships at national and regional levels*'[94]. The Project builds upon the previously completed *WIO-LaB Strategic Action Programme (SAP)* for the protection of the WIO Region from land-based sources and activities that was developed as part of the UNEP-GEF WIO-LaB Project that was implemented in the WIO Region in the period 2004 - 2010.

The WIOSAP project is thus a response to a request made by the Contracting Parties to the Nairobi Convention and it presents an opportunity to the governments in the region and their conservation partners to jointly implement strategies of protecting the coastal and marine ecosystems from land-based sources and activities to provide essential goods and services on sustainable basis.

The project addresses the main threats to the critical coastal and marine ecosystems of the WIO Region as identified in the TDA developed under the concluded WIOLaB Project that focussed on addressing land-based activities and sources of degradation of the coastal and marine ecosystems; including physical alteration and destruction of habitats; water and sediment quality deterioration due to pollution; and the alteration of river freshwater flows and sediment loads. The project addresses cross-cutting issues of governance and awareness which are important in the sustainable management of the coastal and marine ecosystems in the region. These main threats are addressed through the four main components listed above and through a series of demonstration projects, as listed in Table 4-1, nine of which are on the islands.

4.5 Project Progress

GEF approved the WIOSAP Project in 2013 and the project started in December 2016. Prior to the onset of the COVID-19 pandemic, the WIOSAP Half Year Project Report (June 2019-December 2019) established that the average implementation status of the Project as of 30 June 2019 was 49.5%[95]. The 2019 report was available online, but no subsequent Half-Year Project Reports were available.

The Project Monitoring and Evaluation (M&E) process, which aims to track progress in the delivery of the WIOSAP Project from inception through to the terminal evaluations, is overseen by the Project

[94] UNEP (2016) Project Document for Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from land-based sources and activities (WIOSAP). Project number: 4940(GEF).

[95] UNEP/Nairobi Convention (2019) WIOSAP Project Half year progress report Jul-Dec 2019 _3.docx (July- December 2019)

Steering Committee (PSC). The PSC discusses and approves the roles and responsibilities of all project structures, progress reports, Annual Work Plans and Budgets.

The WIOSAP Project was due for mid-term review in early 2020. It is unclear if the mid-term review of the WIOSAP project was completed, as no records of this could be found online.

Table 4-1 WIOSAP Demonstration Projects on the WIO-islands[96]

County	Demonstration Project Title	Implementing organisation	Type
Comoros	Sustainable Management of shallow marine habitats in the Comoros through improved management planning and rehabilitation of degraded sites	General Directorate of Environment and Forests (DGEF) - Comoros	Government ministries, departments & institutions
Mauritius	Assessment of Blue Carbon Ecosystem (Seagrass) around the island of Mauritius	Ministry of Ocean Economy Marine Resources Fisheries and Shipping - Mauritius	Government ministries, departments & institutions
	Restoring the integrated native terrestrial habitat and seabird community of Ile aux Aigrettes, Mauritius.	Mauritian Wildlife Foundation	Non Governmental Organizations (NGOs)
	Coral culture for small scale reef rehabilitation in Mauritius	Mauritius Oceanography Institute (MOI)	Government ministries, departments & institutions
Seychelles	Community-based ecological coastal rehabilitation using an ecosystem approach	Terrestrial Restoration Action Society of Seychelles (TRASS)	Non Governmental Organizations (NGOs)
	Improving water quality by use of constructed wetland wastewater treatment as a Farm in the South of Mahé Island	Ministry of Environment, Energy and Climate Change-Seychelles	Government ministries, departments & institutions
Madagascar	Sustainable management of Eflows for west coast rivers of Madagascar: a case of Betsiboka River	Directorate General of Environment at the Ministry of Environment and Sustainable Development (MEDD) - Centre National de Recherches Oceanographiques (CNRO)	Government ministries, departments & institutions
	Developing collaborative strategies for sustainable management of mangroves in the Boeny Region Littorale, Madagascar	Directorate General of Environment at the Ministry of Environment and Sustainable Development (MEDD) - Centre National de Recherches Oceanographiques (CNRO)	Government ministries, departments & institutions
	Strengthening regulatory framework and national capacity for monitoring effluent discharges, water, and sediments quality in coastal and marine areas of Madagascar	Centre National de Recherches sur l'Environnement	Academic and/or Research institutions

[96] Nairobi Convention (2021) https://www.nairobiconvention.org/clearinghouse/taxonomy/term/5949?page=1

4.6 WIOSAP Demonstration Projects

4.6.1 Comoros

There is one WIOSAP demonstration project ongoing in Comoros, details of which are provided below (Table 4-2). No feedback was received about the impact of COVID-19 on project delivery.

Table 4-2 Comoros WIOSAP Demonstration Project

Project Title	Sustainable Management of shallow marine habitats in the Comoros through improved management planning and rehabilitation of degraded sites
Implementing organisation:	General Directorate of Environment and Forests (DGEF) - Comoros
Type of implementing organization:	Government ministries, departments & institutions
Key institutions which will be directly involved in the project:	Comoros National Parks/ Protected Areas Project (RNAP) and Association pour la Protection de l'Environnement aux Comores (APEC)
Duration of project:	2 years
Tags :	mangrove, Seagrass, community engagement, MPA
Objectives of project:	
Project Objectives To strengthen the management of critical shallow marine habitats in the Comoros through three main approaches: (i) the preparation of site management plans for four formally designated MPA sites, (ii) the rehabilitation of degraded mangrove and seagrass habitats and (iii) engagement of the local communities in environmental conservation. Specific Objective Objective 1: To develop site management plans, inclusive of spatial zoning designs, for the four MPAs completed and approved by the General Directorate of Environment and Forest. Objective 2: To restore 1 ha of mangrove and 1 ha of seagrass ecosystems through community involvement Objective 3: To enhance capacities (capacity building/enhancement) of local communities in environmental conservation Objective 4: To prepare and disseminate at least five different types of education and awareness materials focused on the National Parks of the Comoros, shallow marine habitats of Comoros and on the rehabilitation of marine ecosystems.	
Summary	
The Comoros archipelago has a high level of biodiversity and endemism. However, uncontrolled exploitation of natural resources is putting the unique environment of these islands under immense stress. One of the strategies that have been chosen to protect habitats and conserve biodiversity is the designation of protected areas. The Comoros currently has one marine protected area and there are plans to designate an additional three, largely marine, sites before the end of 2021. For these sites to play their intended role in biodiversity conservation, they will need to implement conservation management measures defined in well-articulated conservation management plans. Degraded habitats will also have to be rehabilitated so that they can regain their full ecological functionality. The aim of this project is to strengthen the management of critical shallow marine habitats in the Comoros. To achieve this, three main approaches will be adopted: i) the preparation of conservation management plans for four (one existing and three future) MPA sites, ii) the rehabilitation of degraded mangrove and seagrass habitats in one MPA site and ii) the engagement of the local communities in environmental conservation. The project will contribute to the implementation of the Comoros National Strategy and Action Plan for Biodiversity Conservation (2001). It will be implemented through partnership between government institutions, NGOs and local communities.	

4.6.2 Madagascar

There are four WIOSAP demonstration projects ongoing in Madagascar, details of which are provided below (Table 4-3, Table 4-4, Table 4-5). One of the four projects provided feedback using the online form about the impact of COVID-19 on project delivery.

Table 4-3 Madagascar WIOSAP Demonstration Project 1

Project Title	Strengthening regulatory framework and national capacity for monitoring effluent discharges, water, and sediments quality in coastal and marine areas of Madagascar
Implementing organisation:	Centre National de Recherches sur l'Environnement
Type of implementing organization:	Government ministries, departments & institution
Country of implementation:	Madagascar
Key institutions which will be directly involved in the project:	Ministry of Environment Ecology and Forests (MEEF) - Madagascar, Foreign university
Duration of project:	2 Yea
Tags :	Effluent discharges, water quality, Sediments quality, marine pollution, Marine litter, Regulatory framework, Effluent discharge, Land-based sources of pollution and activities
Objectives of project:	
Project Objectives The project overall objective is to improve the health status of land-based activities affected marine and coastal ecosystems in the River Betsiboka estuary (including the Bombetoka Bay) through effective implementation and enforcement of an appropriate and regionally harmonized regulation framework Specific Objective Improve the MEEF and its regional capacity to effectively manage and regulate land-based sources of pollution and activities: Increase existing national monitoring capacity to help implement and monitor effluent discharges and water and sediment quality in receiving coastal and marine environment:	
Summary	
The Bombetoka Estuary is highly vulnerable to pollution from Mahajanga city's tourism, agricultural, industrial, and other sectors. Tests of the water by the National Centre For Environmental Research (CNRE) indicate the presence of toxic heavy metals and hydrocarbons that pose serious risks to both human and marine life. The project will demonstrate how water quality and sediments can be improved by developing a regulatory framework and monitoring system—a framework which will provide the basis for the development of national wastewater standards. Both institutional and human capacity to monitor pollution will thereby be strengthened—and the risks to human and marine health reduced.	

Table 4-4 Madagascar WIOSAP Demonstration Project 2

Project Title	Developing collaborative strategies for sustainable management of mangroves in the Boeny Region Littorale, Madagascar
Implementing organisation:	Directorate General of Environment at the Ministry of Environment and Sustainable Development (MEDD) - Centre National de Recherches Oceanographiques (CNRO)
Type of implementing organization:	Government ministries, departments & institutions
Country of implementation:	Madagascar
Key institutions which will be directly involved in the project:	Regional Directorate of Environment and Sustainable Development, Ecole Doctorale of Mahajanga l'University, Regional Directorate of Agriculture, Breeding and Fishing, National Center for Environment Research (CNRE), National Center for Mapping (FTM), Régional committee GIZC Boeny, Chief of Boeny Region, Chiefs of District of Mahajanga I, communes of Mahajanga I et II, Marovoay, Mitsinjo, Soalala
Duration of project:	2 Years
Tags :	mangrove, mangrove restoration, integrated management
Objectives of project:	
Project Objectives To promote the sustainable conservation and utilization of mangroves in the Boeny Region through the development of a viable, collaborative and integrated management approach.	

Specific Objective
Objective 1: To develop a sustainable co-management mechanism to strengthen the governance of the mangroves as a renewable natural resource.
Objective 2: To promote community-based mangrove restoration to compensate for the degraded and lost resource and secure the future of ecosystem services they provide.
Objective 3: To appraise and promote viable, alternative livelihood options to enhance local community socio-economic welfare and safeguarding of the environment.

Summary

Madagascar accounts for about 2% of the global mangrove extent. About 20% (equivalent to over 60,000 ha) of these mangroves are in the Boeny Region in the northwest of the country, which support a diversity of livelihoods. In many cases, poverty, traditional dependence on mangrove resources and lack of viable alternative livelihoods are the root causes of mangrove loss and degradation, coupled with inadequacies in the enforcement of governance mechanisms. Consequently, annual mangrove loss is estimated at 0.06%. Accordingly, the ability of mangroves to continue offering the ecosystem services in support of livelihoods is compromised, despite the fact that mangroves in Madagascar are legally within the state's domain. There is, however, a devolution arrangement (referred to as GELOSE) that provides limited access user rights to the mangroves for domestic and non-commercial use. Despite a partial devolution of management rights from the government to local communities, there is a lack of comprehensive and effective management strategies to counteract the mangrove degradation and loss observed in almost all mangrove ecosystems in Madagascar. Hence, the relevance of GELOSE legislation to actually favour community-based management is debatable. This project seeks to demonstrate viable modalities of enhancing community engagement within the existing framework of such local arrangement. The project aims to promote sustainable conservation and utilization of mangroves in the Boeny region through development of viable collaborative and integrated management approach. The project will demonstrate sustainable community-based management, restoration and livelihood activities in the framework of the locally secured management (GELOSE) and the use of Dina (Charter of customary law) in the governance of natural resources at community level in three villages. This is expected to result in sustainable co-management mechanism developed in the 3 villages, sustainable restoration measures demonstrated in 10 hectares of mangrove ecosystem, and 3 viable alternative livelihood activities identified and accepted by communities. The project will complement on-going mangrove conservation work including that of Asity Madagascar, a non-government organization in Soalala in the Mahavavy Bay, south of Boeny Region in collaboration with Birdlife International and will incorporate lessons learnt from the recently launched community -based mangrove carbon offset project in the Bay of Assassins in the southwest region.

Table 4-5 Madagascar WIOSAP Demonstration Project 3

Project Title	Sustainable management of Eflows for west coast rivers of Madagascar: a case of Betsiboka River
Implementing organisation:	Directorate General of Environment at the Ministry of Environment and Sustainable Development (MEDD) - Centre National de Recherches Oceanographiques (CNRO)
Type of implementing organization:	Government ministries, departments & institutions
Country of implementation:	Madagascar
Key institutions which will be directly involved in the project:	Ministry in charge of Water, Ministry in charge of Agriculture, Ministry in charge of Fisheries and fishery resources, Ministry in charge of Meteorology, National Authority of Water and Sanitation (ANDEA), Association des Usagers de l'Eau (AUE), National Centre for Water, Sanitation and Rural Engineering (CNEAGR), National Centre for Environmental Research (CNRE)
Duration of project:	2 years
Tags :	

Objectives of project:

Overall objective:
To promote sustainable management of the river basins in the west coast of Madagascar to maintain a healthy flow and reduce sediment load to minimize detrimental impacts on coastal ecosystems.
Specific objectives

- Objective 1: To increase awareness on environmental flow assessments (EFA) and sustainable practices for reduced sediment pollution and downstream impacts

• Objective 2: To conduct the EFA in the pilot rivers catchment of Betsiboka to inform sustainable management of river flows • Objective 3: To implement the recommendations of the EFA for sustainable river management
Summary Accounting for environmental flows is an integral part of river basin management, and leads to obtaining good ecological state for rivers subjected to pressure from exploitation of their waters, particularly for irrigation purposes and episodes of drought that regularly reduce their flow to bare minimum. The Betsiboka river in Madagascar represents a large catchment area of 49,000 km2 passing through 3 major regions. The river catchment faces a number of challenges including intensification of forest fires, deforestation, and multiple competing water uses that put pressure on the water resources, and these have led to deterioration of the state of the river. There is therefore need to integrate the management of water resources in the development of activities, influencing development and management processes, and limiting pressures on riverflows. The project will conduct environmental flow assessment activities through sensitization and information sharing with stakeholders. The project will carry out an environmental flow study to find implementable solutions for managing environmental issues, in a rational and sustainable way, the river flows and sediment load of rivers coming from the Betsiboka catchments by promotion of water and technical soil conservation recommended and adapted to the situation, the reconstruction of natural resources by the ecosystem and the agro-ecosystem while ensuring the socio-economic development activities are improving the incomes of the local populations in the environment.. The project will contribute to the proposal for a rational and sustainable catchment scheme, environmentally sensitive agrarian systems and the improvement of the vulnerability of the exploitation and population activities. The project will adopt the participatory, spatial, and empowering and gender approach.

4.6.3 Mauritius

There are three WIOSAP demonstration projects ongoing in Mauritius, details of which are provided below (Table 4-6). Both projects were impacted by the impact of COVID-19 as reported by the key respondents that completed the online survey.

Table 4-6 Mauritius WIOSAP Demonstration Project 1

Project Title	Assessment of Blue Carbon Ecosystem (Seagrass) around the island of Mauritius
Implementing organisation:	Ministry of Ocean Economy Marine Resources Fisheries and Shipping - Mauritius
Type of implementing organization:	Government ministries, departments & institutions
Country of implementation:	Mauritius
Key institutions which will be directly involved in the project:	University of Mauritius, National Coast Guard - Mauritius, Eco-Sud - Mauritius, Reef Conservation - Mauritius
Duration of project:	2 Years
Tags :	Blue Carbon, Seagrass, Seagrass Ecosystems, Carbon sequestration
Objectives of project:	
Project Objectives To investigate the current status of seagrasses around the coast of Mauritius and to determine their carbon sink potential to further enabling the development of management strategies, to formulate policies gearing towards conservation and rehabilitation of seagrass ecosystems in Mauritius and to generate blue carbon credit. Specific Objective a) Conduct surveys on the density and distribution of seagrass around Mauritius Island b) Establish permanent seagrass monitoring stations at specific sites around the island c) Carry out sediment coring at specific seagrass sites around the island to determining carbon storage d) Analysis of carbon sequestration content in sediment e) Calculation/generation of blue carbon credit	
Summary	
Seagrass ecosystems have been recently acknowledged for their blue carbon potential. Blue carbon is a recent concept used to refer to organic carbon stored in coastal and marine ecosystems. Mangroves, salt marshes and seagrass beds possess enormous potential to capture, store and release carbon. These blue carbon ecosystems are considered important natural carbon sink sources. Unfortunately, seagrass beds are globally being impacted by multiple anthropogenic stressors from	

coastal development, nutrient enrichment, sediment runoff, physical disturbance, commercial fishing practices, invasive species, diseases, aquaculture, algal blooms, and global warming. The result of seagrass loss worldwide is leading to a loss of associated ecosystem services, which makes it a contributing factor to the degradation of the ocean's health. In Mauritius, the main pressure on seagrass emanates from tourism development in region where seagrass beds are cleared out for a more appealing lagoon to the tourists. Despite the study survey conducted on seagrass, there is a current lack of knowledge on seagrass species composition, density distribution and a knowledge gap on the efficiency of seagrass beds to act a natural carbon sink in Mauritius. The purpose of the project is to investigate the current status of seagrasses around the coast of Mauritius and to determine their carbon sink potential to further enabling the develop of management strategies, to formulate policies gearing towards conservation and rehabilitation of seagrass ecosystems in Mauritius and to generate blue carbon credit. This study would yield a map showing the areas of the distribution pattern and diversity of the seagrasses around the coast of Mauritius. Furthermore, it is also expected that during the fieldwork, critical areas with constant degradation would be identified. Long term seagrass monitoring transects will be established and monitoring will be carried out twice yearly. Overall, both the outcomes from the seagrass assessments and the determination of the blue carbon storage will give substantial data to determine the specific location and the targeted seagrass species to be used for the initiation of restoration programme after the 2 years. The project will also help in the formulating of national policy for the protection and conservation of seagrass around the coast of Mauritius and in national reports.

Table 4-7 Mauritius WIOSAP Demonstration Project 2

Project Title	Restoring the integrated native terrestrial habitat and seabird community of Ile aux Aigrettes, Mauritius.
Implementing organisation:	Mauritian Wildlife Foundation
Type of implementing organization:	Non Governmental Organizations (NGOs)
Country of implementation:	Mauritius
Key institutions which will be directly involved in the project:	BirdLife International
Duration of project:	2 years
Tags :	Ecosystem health, Terrestrial habitat, Birds, Seabird, Coastal forest habitat, Seabird habitat, marine ecosystem
Objectives of project:	
This project will restore coastal forest habitat on Ile aux Aigrettes, specifically 'seabird habitat', and restore terrestrial and near-island marine ecosystem functioning through the attraction of seabirds. The project will enable Mauritians to learn about their natural heritage and the importance of biodiversity conservation, and remain a global leading example of island conservation and restoration.	
Summary	
The project seeks to advance ecosystems restoration on Ile aux Aigrettes Nature Reserve, a site of national and international biodiversity importance, and the surrounding sea. Recognising that terrestrial conservation and seabird colony re-establishment has benefits for both land and marine ecosystems, the project will conduct focused, seabird friendly, habitat restoration and seabird attraction. The ultimate aim is to encourage the use of Ile aux Aigrettes by seabirds, and promote the synergistic relationship between land and sea that is mediated by seabirds, and to promote knowledge of mutualistic relationship between terrestrial and marine ecosystems, with seabirds being the interface.	

Table 4-8 Mauritius WIOSAP Demonstration Project 3

Project Title	Coral culture for small scale reef rehabilitation in Mauritius
Implementing organisation:	Mauritius Oceanography Institute (MOI)
Type of implementing organization:	Government ministries, departments & institutions
Country of implementation:	Mauritius
Key institutions which will be directly involved in the project:	Mauritius Oceanography Institute (MOI), Ministry of Social Security National Solidarity and Environment and Sustainable Development - Mauritius, National Coast Guard - Mauritius, Fisheries Protection Service (NCG) - Mauritius, Registered Fishermen Associations (RFA) - Mauritius, Albion Fisheries Research Center, NGOs
Duration of project:	2 years
Tags :	Coral reefs, Coral culture, climate change

Objectives of project:
Project Objectives To mitigate the impact of climate change on coastal communities by implementing coral reef restoration initiatives using selected resilient corals Specific Objective a) To set-up of sea-based demonstration farms for culture of selected resilient corals for rehabilitation of degraded reef sites. b) To train stakeholders and coastal communities in coral culture and reef rehabilitation techniques hence providing additional skills to the communities. c) To strengthen environmental awareness of the community, to emphasize the significance and conservation aspects of corals and coral reefs.
Summary
Over the past decade, the Mauritius Oceanography Institute (MOI) has successfully developed and optimized locally adapted techniques for culture of corals on-land and at sea for conservation purposes. Building on these results, the MOI recently initiated in 2017 a community-based coral culture project in the Republic of Mauritius. This three-year project aims at training and building capacity of coastal communities (including fishers) in coral culture and reef rehabilitation techniques. The project also coincides with the Government initiative of "Promoting coral culture as an alternative livelihood for fisherman and coastal communities for conservation of marine biodiversity". Currently, the project is being implemented at four sites around the island, with approximately 110 community members benefiting from training under a "Coral Culture Training Programme". The project, which is expected to be completed by end 2020, will be extended until 2022 through acquisition of funding through the WIOSAP grant. The 2-year extension of the project will be for implementation of project activities at three additional earmarked sites around Mauritius, with targeted training of additional 60 community members.

4.6.4 Seychelles

There are two WIOSAP demonstration projects ongoing in Seychelles, details of which are provided below. No feedback was received about the impact of COVID-19 on the progress of these two projects.

Table 4-9 Seychelles WIOSAP Demonstration Project 1

Project title	Community-based ecological coastal rehabilitation using an ecosystem approach
Implementing organization:	Terrestrial Restoration Action Society of Seychelles (TRASS)
Type of implementing organization:	Non Governmental Organizations (NGOs)
Project(s) linked to:	WIOSAP
Country of implementation:	Seychelles
Key institutions which will be directly involved in the project:	Gaea Conservation Network Seychelles (Gaea Seychelles), Chinese Academy of Sciences (CAS), University of Seychelles (UniSey), University Center for Environmental Education (UCEE), Ecosystem-Based Adaption Watershed Praslin Committee (EBA PWC), BS Excavation, Ministry of Environment, Energy and Climate Change- Seychelles
Duration of project:	2 years
Tags :	coastal rehabilitation, seagrass beds, Coral reefs, Curieuse marine park
Objectives of project:	
Project Objectives To rehabilitate fragmented wetlands to improve their functions; e.g. enhanced absorption and filtration of sediments coming from badly-eroded degraded hills, thus protecting seagrass beds and coral reef in the Curieuse marine park. **Specific Objectives** Objective 1: To prepare Rehabilitation and Management plans for the marsh, mangrove, degraded shrubland and barren hill above the wetlands based on scientific data. Objective 2: To rehabilitate and manage the wetlands and foothills at Pasquière (based on the above plans) to enhance ecosystem and enable development of sustainable activities, e.g. ecotourism, education and research. Objective 3: To enhance understanding on the importance of ecological rehabilitation. Objective 4: To train and enhance restoration skills and knowledge amongst local communities and participating organizations.	

Summary
Praslin Island has been subject to numerous threats on its ecosystem including the loss of wetlands and soil erosion on degraded hills leading to sedimentation of critical wetlands downstream, and the encroachment of these wetlands by invasive alien plant species, which reduces the ability of these wetlands to provide important ecosystem services. The island has also suffered numerous forest fires which in the absence of rehabilitation, these burnt forests have been subjected to severe degradation and red sediment-laden water is a common sight during rainfall events. Sediments are deposited into the wetlands or directly into the sea where they have other impacts such as reducing the water storage capacity, deposition of sediments into raised land, which facilitate encroachment by invasive alien species, silt deposition onto seagrasses and coral reefs that stresses these habitat-types. To date 40% of Praslin is degraded and 90% of lowland wetlands in the Seychelles have been lost, making lowland wetlands the most threatened and critical habitats. This project seeks to address the degradation of critical coastal habitats at Pasquière adjacent to and within the Curieuse Marine National Park. It aims to prevent the loss of wetlands by enhancing vegetation cover on degraded foothills upstream of the wetlands, remove invasive plant species encroaching the wetlands and replant with appropriate native species, reduce soil erosion from the land into the marine park, and enhancing the overall biodiversity and functioning of the ecosystems. A ridge to reef, landscape level approach is taken to address the impacts of soil erosion and associated stressors (invasive alien species encroachment) onto important ecosystems. There is a need to rehabilitate the degraded foothills using anti-erosion measures to reduce erosion, bioengineering techniques and replanting to stabilize the slopes, removal of invasive alien plants and replacement with appropriate wetland/coastal species, profiling of channels to enhance hydrological flows and a general improvement of the wetland to enhance its biodiversity and sustainable use e.g. eco-tourism. The rehabilitation and management of degraded but critical coastal habitats will be done by working together with communities, organizations and local government to encourage and ensure local community participation in rehabilitation efforts during and beyond the project. The project will provide training to interested participants and will equip participants with the skills on rehabilitation techniques and monitoring which are needed to contribute to the implementation of activities during and beyond the project lifespan. The project will valorize and demonstrate the use of landscape-level, Ecosystem-based approaches to ecological coastal rehabilitation, to guide replication in other areas.

Table 4-10 Seychelles WIOSAP Demonstration Project 2

Project Title	Improving water quality by use of constructed wetland wastewater treatment as a Farm in the South of Mahé Island
Implementing organisation:	Ministry of Environment, Energy and Climate Change- Seychelles
Type of implementing organization:	Government ministries, departments & institutions
Country of implementation:	Seychelles
Key institutions which will be directly involved in the project:	Seychelles Agricultural Agency (SAA), Ian Charlette Consulting, Public Health Authority (PHA), Public Health Laboratory (PHL), Seychelles Bureau of Standards (SBS), District Administration (DA) in association with the Regional District Council, University of Seychelles
Duration of project:	2 years
Tags :	constructed wetland, wastewater treatment, water quality

Objectives of project:
Project Objectives To undertake a demonstration project for treatment of wastewater from a small-scale piggery, and to mitigate the impacts by applying best practices. Specific Objectives Objective 1: To improve wastewater discharge from the small-scale piggery Objective 2: To improve networking and establishment of a working group Objective 3: to improve crop production and food security.

Summary
Management of solid waste, and particularly animal waste and the limits to which animal waste can effectively be treated and recycled in farming areas instead of release to into the natural environment, is a major challenge faced by the agricultural sector in the Seychelles. There are severe limitations to where animal rearing can be undertaken and also on the size of the animal rearing facility given the proximity either to sensitive environment or residential areas. The Public Health Agency (PHA) has recurrent issues with the waste abatement capability of existing disposal systems and the way

that the facilities such as piggeries are managed in general. Furthermore, the suspended solids that accumulate on the farms are neither treated conveniently nor considered to a considerable level as a resource.

The project seeks to implement a small-scale demonstration project on improvement of water quality by use of constructed wetland wastewater treatment at a farm in the southern part of the Seychelles' main island, Mahé, that can eventually be replicated by the farming community, especially small-scale farmers. The project will apply the principle of Integrated Water Resources Management (IWRM) in the reuse of treated effluent to reduce the use of chemical fertilizers on the farm and eventually in the country in general. The overall treatment and recycling of the effluent should contribute to the improvement of the country's aesthetics and ecosystem health and thus will also assist the country in achieving the goals set out in The Seychelles Eco-Tourism Strategy for the 21st century (SETS 21). The strategy seeks to position Seychelles as an eco-tourism destination, promoting a sustainable tourism industry and enhancing the economic benefits of tourism for local communities. There is also limited data on the re-use of treated effluent for improving crop yield, despite the fact that this has been emphasize in the Sanitation Master Plan for the Seychelles. The project intends to create a working group that can further emphasize the practicality of creating small scale wetland systems that can effectively treat wastes from piggeries and reuse the treated effluent and reduce the dependence on chemical fertilizers, leading to savings. Sampling of ground and surface waters will determine the changes in pollution level that potentially can be washed downstream and enter ecosystems, like wetlands and marine reef systems.

4.7 COVID-19 impacts on WIOSAP.

4.7.1 Impact on the Project

The pandemic appears to have impacted the speed of delivery of the WIOSAP project. Project documents and reports are available on project website up until the end of 2019, then there are substantive gaps in the availability of reports during 2020 and 2021. It is understood that the mid-term review that was due to happen in 2021 has not yet been completed.

4.7.1.1 Impact on Expenditure

A review of the Project budget revealed that as of 2019, the WIOSAP project had 7,392,419 USD remaining from an overall budget of 10,867,000 USD[97]. Project expenditure during 2020 and 2021 are likely to be considerably below projected values.

Table 4-11 WIOSAP Project Budget and Expenditure[98].

	PROJECT BUDGET Total (USD)	REMAINING BUDGET Q4 2019 (USD)
Personnel Component	2,701,079	1,254,088
Sub-contract Component	5,679,493	4,779,447
Training Component	2,025,353	950,250
Equipment and Premises Component	147,384	121,324
Miscellaneous	313,691	287,310
TOTAL	10,867,000	7,392,419

4.7.2 Impact on the Demonstration Projects

Before the pandemic, in the 4th quarter of 2019, the WIOSAP Project Steering Committee approved 15 proposals for demo projects (Table 4-1 to Table 4-10).

[97] UNEP/Nairobi Convention Secretariat (Dec 2019). Quarterly Expenditure Statement and Unliquidated Obligations Report (US$1)
[98] Ibid

Delivery of these demonstration projects has been impeded by the restriction measures put in place to contain the spread of the virus. From the feedback received, the most significantly impacted areas of work were field work, stakeholder engagement, training and workshops, i.e., all the types of activity that really require aa physical presence on site or face-t-face meetings.

Table 4-12 Impacts of COVID-19 on WIOSAP Demonstration Projects

	Yes	No	Unsure
Administrative procedures	●	●	
Financial procedures	●	●	●
Recruitment procedures	●	●	
Procurement procedures	●	●	
Receipt of training	●	●	●
Delivery of training	●		
Field work (i.e., mobilisation of field teams)	●		
Stakeholder engagement / consultation	●	●	
Reporting procedures	●	●	●
Workshops	●	●	
Conferences	●	●	●
International travel (project associated)	●	●	●
Other			

4.7.3 Key respondents' feedback on the impact on the WIO-SAP Demonstration Projects

Key respondents' feedback indicated that COVID-19 impacts included:

- **Administrative Procedures:** Sanitary, social distancing measures, work from home orders, the closure of office buildings resulted in delays in normal administrative procedures, and especially in those countries where there was limited technological capacity within government. This included delays in the receipt of payments for staff salaries, equipment and materials.
- **Recruitment:** Projects have faced difficulties in recruiting staff, especially when these staff needed to travel from overseas, when there were access restrictions in place and border closures, or just due to delays in government procedures to get work access permits.
- **Technical support**: Technical specialists and consultants have not been able to travel to the project site to provide technical inputs, and to meet to discuss the project activities with staff and stakeholders.
- **Field work:** Field staff have not been able to access field sites to undertake essential field work, to collect samples, conduct monitoring, conservation related research and essential maintenance. There are no alternative measures to these types of field work that require a physical presence on site.
- **Procurement:** Procurement processes have been significantly impacted, particularly the purchase of equipment from overseas, which has been disrupted and delayed. The costs of goods have increased as have shipping costs. The shipping of items has also either been delayed or not possible.
- **Training:** The delivery of training has been delayed as it has not been possible to arrange workshops or practical class-room style training sessions. While some of these trainings have been delivered virtually which require face-to-face interactions.

- **Education and Outreach:** Ecotours and education programmes severely disrupted. Visits for stakeholders, scientists, had to be rescheduled. Visitor and education visits (to showcase project) came to a halt.

CHAPTER 5. Mitigation actions to enhance resilience following the shocks precipitated by the COVID-19 pandemic

5.1 Preamble

This chapter aims to elaborate recommendations on mitigating actions to build back better and enhance resilience following the shocks precipitated by the COVID-19 pandemic for the WIO-islands of Comoros, Madagascar, Mauritius and Seychelles.

5.2 Biodiversity protection

Pre-COVID-19 biodiversity was already declining at alarming rates. The pandemic has allowed the world to pause and deepen our collective appreciation for nature, and to take stock of progress with regards to biodiversity conservation and management of the natural environment, and our shared resources and what is meant by sustainable development.

COVID-19 has presented serious implications for the short-term achievement sustainable development, and impeded on the ground conservation work, it may however have also provided the opportunity for bigger achievements in the medium or longer term in moving away from business as normal and seeking to rebuild better.

The pandemic has amplified weaknesses in the fragile funding models for biodiversity conservation on WIO-islands as elsewhere, especially the reliance on tourism revenues for income, staff and volunteers. There is an urgent need to identify alternative more robust and sustainable models for conservation and protected area finance that is not so dependent on tourism, such as trust funds which provide a more stable funding model.

In the immediate future, biodiversity related organisations will need extra support to recover from the pandemic as their incomes have been severely impacted and may continue to be affected where this was linked to CSR/ESG sources. Governments could offer immediate benefits through providing tax relief and rebates to help these types of organisations to continue operating as the islands economies recover. Support could also be provided to assist these organisations in recruiting staff and / or volunteers from overseas where required. There is also an urgent need for training to build internal capacity to reduce the dependency on recruiting staff / volunteers from abroad.

Government and NGO staff involved in biodiversity conservation were subject to the same lockdown and confinement measures, which meant that essential works were not able to continue. There is a need to recognise wildlife conservation as a frontline activity requiring special consideration and priority. This will require a review of biodiversity related policies and the integration of the positives outcomes of the pandemic, which put nature at the centre of island economies.

5.3 Diversification of Economies

The initial shock of the COVID-19 pandemic generated large external and fiscal financing needs among all WIO-islands and globally. The pandemic amplified weaknesses or biases in exiting economic models, especially on remote islands that are heavily dependent on tourism.

Fostering a sustainable recovery will need to addresses WIO-islands critical structural challenges, enhance the resilience and sustainability of existing key economic sectors, and foster economic diversification by unlocking new, more resilient and sustainable, development opportunities that can attract private investments and mobilise domestic resources.

5.3.1 Reducing the dependency on tourism

Globally, the closure of international borders effectively protected populations from becoming sick, and avoided health systems becoming overwhelmed, but it hit WIO-island economies hard. Those islands that were heavily dependent upon foreign investment from tourism receipts were left very exposed. It would be verging on perverse for islands to continue to follow a mono-track economical model without greater diversification that promotes sustainable tourism and considers alternative options.

The diversification of the island economies away from tourism is likely to be hugely challenging (see 5.4 below). However, WIO-islands such as Mauritius have repeatedly demonstrated their capacity to reinvite themselves, shifting from an economy that was initially fuelled by sugar, followed by textiles and clothing, tourism and real estate, and in more recent years information communications technologies and the potential of the sustainable blue economy (see below).

5.3.2 Supporting the Sustainable Blue Economy

Pre-COVID Africa was on the brink of transformational change. A WWF report prepared in 2017 emphasised the need to shift away from resource-intensive pathways to innovative resource-efficient pathways and recognised the role of the ocean and its assets in achieving sustainable development[99].

Within the region initiatives to support the diversification of island economies into a sustainable Blue Economy were already underway in two of the WIO-islands before the pandemic[100]:

- Seychelles' Blue Economy[101] seeks to harness local marine, land and other resources in a responsible, sustainable and connected manner as a mainstay of long-term development. The multi-faceted approach includes high-level summits and cooperation hosted through the United Arab Emirates, and an innovative "debt for adaptation" swap to address Seychelles' national debt in exchange for strictly protecting 30 per cent of the EEZ to support climate adaptation.
- Mauritius' national Ocean Economy strategy[102], launched by the prime minister in December 2013, was intended to take Mauritius to the next stage of development as a "high-income country, with a large geographic territory and the competencies, technologies and systems to

[99] Obura, D. et al. 2017. R*eviving the Western Indian Ocean Economy: Actions for a Sustainable Future.* WWF International, Gland, Switzerland. 64 pp.
[100] Obura, D. et al. 2017. R*eviving the Western Indian Ocean Economy: Actions for a Sustainable Future.* WWF International, Gland, Switzerland. 64 pp.
[101] www.thenational.ae/business/economy/seychelles-the-worlds-first-blue-economy-enters-theinvestment-spotlight
[102] The Ocean Economy. 2013 A Roadmap for Mauritius. www.oceaneconomy.mu

manage this territory". The strategy has included strong international engagement, promoting regional blue economy approaches.

The onset of COVID-19 brought a new landscape and reality, in which all economies, small and large, have had to adapt and rise to the occasion, in the face of unprecedented odds. Nevertheless, the development of a sustainable blue economy remains one of the key pathways for the WIO-islands to build back better. Ocean-based sectors are already the backbone of the WIO-island economies. Diversification of marine related economic activities, exploring new and emerging ocean-economy opportunities, fostering linkages and multiplier effects across multiple economic and social areas will be key to achieving a fast and resilient recovery.

Mainstreaming biodiversity into existing ocean-based sectors, providing policies that maintain a climate and broader environment focus will enhance both economic sustainability and resilience. Sustainability certification programmes and requirements for the use of such standards could be embedded into concessional lending and recovery packages. Other measures could include the provision of support for additional long-term development co-operation schemes, such as international cost-sharing mechanisms for the conservation and sustainable use of ocean assets and schemes to enhance expertise and risk assessment for emerging ocean-related economic activities.

Box 5-1 Reviving the Ocean Economy

A report prepared by WWF in 2017, pre-pandemic aimed to provide a framework for building an inclusive blue economy prioritizing sustainable development through investing in natural assets and prudent economic management. The report outlined seven essential actions to sustain ocean ecosystems and provide a stable foundation for healthy national economies:

- **Action 1 Implement Effective Management of Ocean Assets:** Implement steps to achieve Aichi Target 11 and SDG 14 through new ecologically and socially coherent networks of marine protected areas (MPAs) and locally managed marine areas (LMMAs) in critical nearshore and offshore habitats and ensure effective management.
- **Action 2 Ensure Sustainability of Small-Scale and Industrial Fisheries and Aquaculture:** Implement legislation to apply FAO guidelines and strengthen community-based approaches and benefit sharing in fisheries and aquaculture, to cover 50 per cent of all fish consumed by 2030.
- **Action 3 Transform to 21st Century Climate-Resilient and Carbon-Neutral Economies:** Incentivize ecosystem-based climate resilience with sustainable finance and implement national strategies for carbon-neutral development by 2030.
- **Action 4 Adopt a Sustainable, Inclusive Blue Economy Approach:** Apply policies and legislation that internalize environmental values in business practices, provide for more inclusive employment and meet the production and consumption needs of 50 per cent more people by 2030.
- **Action 5 Implement Integrated Ocean Planning and Management:** Develop and implement plans for integrated ocean management through marine spatial planning processes at relevant scales (national, sub-regional, sub-national). These plans should align with one another and, by 2030, cover the entire Western Indian Ocean region.
- **Action 6 Invest in Social Capital as a Cornerstone Of Future Prosperity:** Integrate social, economic and environmental strategies through pursuing all SDGs with a focus on residents of the coastal zones of all Western Indian Ocean countries.
- **Action 7 Build Partnerships for Sustainable Development:** Create enabling policies and promote best practices that support multi-stakeholder partnerships to secure social, environmental and economic benefits equitably. This should expand the number of partnerships and the proportion of natural assets that they govern.

5.3.3 Promoting the Circular Economy

Linear economic growth models are often accompanied by a gradual increase in resource use and decrease in the quality of ecosystems and natural assets that places long term sustainable development ambitions at risk. By comparison, a circular economy takes a systems perspective, considers domestic and international value chains, allows societal needs to be met while also helping economic diversification, job creation, while also safeguarding natural assets, avoiding waste and reducing greenhouse gas (GHG) emissions. The circular economy allows countries to realise climate ambitions and commitments under the Paris Agreement, contributing to Nationally Determined Contribution (NDC) or its mitigation pledge, and align these with its efforts to achieve the Sustainable Development Goals (SDGs).

Some examples of the opportunities provided by the circular economy that would be appropriate for the WIO-islands include:

- Compost municipal organic waste to produce soil enhancer
- Wood-based construction in the residential and tourism sectors
- Align the tax regime with sustainable development ambitions
- Community-based or smallholder biogas systems made from waste plastics
- Conservation agriculture to optimise soil carbon
- Circular procurement by the government and by development partners
- Regional organic certification targeting export and tourist markets
- Non-toxic, antifouling method based on biomimicry
- Collect, sort and export recyclable materials
- National plastics strategy
- Circular fish value chain
- Convert pastures to silvopastoral livestock systems
- Artisan plastics recycling and repurposing
- International collaboration to improve livestock efficiency
- Ecotourism supported by local communities
- Excess materials marketplace and urban mining
- Agroforestry and food forests

5.3.4 Payment for Ecosystem Services

While much of the finance leveraged during the pandemic was needed to meet immediate healthcare spending needs, WIO-island governments also demonstrated implemented various social-support programmes to cushion the population from the negative shock presented by the pandemic.

The programming of similar targeted social support packages, that incorporate payment-for-ecosystem services would help refocus and reorientate the economy of these islands to build back better, while also providing opportunities to address youth unemployment, provide training, work experience, while and address gender imbalances and support for the vulnerable.

Rodrigues has been using the payment-for-ecosystem service (PES) approach during seasonal octopus closures for the past 10 years. During the closures, the octopus fishers are employed to do island clean-up, planting of endemic plants, and other tasks to beautify the island.

During COVID-19, the Commission for Tourism of the Rodrigues Regional Assembly, provided PES support for tourism operators impacted by the pandemic. The local marine NGO Shoals Rodrigues were awarded funding to employ the tourism operators to support their coral reef restoration activities.

5.3.5 Reducing Pollution through Organic Farming

Agriculture is often viewed as the poor cousin compared to other economic sectors, such as tourism, marine resources, or financial services on most islands. However, the border closures as a result of the COVID-19 pandemic caused many islands to re-evaluate their food security and agricultural sectors to determine whether it was feasible to reduce reliance on the outside world when it comes to food.

Food security on islands including the WIO-islands is often dependent on imports as suitable agricultural land is limited, and there are challenges created by environmental conditions such as pests and diseases, and agricultural policies. There is increasing recognition of the need to transition to agro-ecological and organic farming serves to reduce the use of harmful chemicals, improve soil management, and soil nutrition, which also benefit the surrounding marine ecosystems, including critical habitats such as coral reefs.

On the island of Rodrigues, the Commission responsible for the Environment has been promoting the transition to agroecological farming for at least the past decade. More recently, with support from the Global Environment Facility's (GEF) Small Grants Programme (SGP), implemented by the United Nations Development Programme (UNDP) supported the establishment of Farming Schools, to address youth unemployment. The "Youth Empowerment Through Organic Farming School project"[103] is designed to tackle both youth unemployment and food security. The main objective of the project was to build an alternative school that empowers youth with the necessary skills and capabilities to undertake small organic agri-business unit development.

5.4 Education, Training and Skills Development

COVID-19 has clearly highlighted the need for the development of societies with robust and diverse skill sets. Such adaptive capacities would allow for the development of new products, innovative marketing, market intelligence and digital skills all of which will also support the expansion of a sustainable blue economy. There needs to be the development of more free online training courses, delivered in partnership with universities and other educational and training institutions, to facilitate up-skilling and reskilling. International organizations can support the provision of free content.

The COVID-19 crisis has highlighted the needs for the development of digital services within the WIO-islands, both within government and the private sector. Skills will be needed in web and app development, artificial intelligence among others. The digital economy is an exciting sector which offers many possibilities for the WIO-islands, and would support the expansion of the blue economy.

[103] https://undp.shorthandstories.com/will-work-for-food/

5.5 Partnerships

Joint procurement initiatives are an example of intercountry collaboration which can both reduce costs and improving procurement efficiency. The Pooled Procurement Programme for pharmaceutical supplies that was agreed for SIDS in the WIO region as a result of the pandemic is likely to have lasting additional benefits including the harmonization of medicines management systems, improvements in supplier performance and a reduction in the procurement workload for the countries involved. Similar models could be envisioned for equipment, infrastructure and surveillance needs related to biodiversity management.

5.6 Finance

Sustainable financing mechanisms are required for implementation of on-the-ground conservation and biodiversity management actions. Conservation activities are so often project dependent and the stop start nature of the funding can lead to significant gaps in monitoring or maintenance works. Stable secure innovative funding sources are therefore needed to pay staff, purchase equipment and materials etc. and these could include the wider use of conservation trust funds. Funding can also be used to shift from harmful subsidies to more sustainable and equitable uses (e.g. payment for ecosystem services schemes). Other incentives, such as tax reliefs could be used to encourage the adoption of environment friendly practices within the private sector.

The classification of SIDS and the assessment of environmental and socio-economic vulnerability needs to be reconsidered. A vulnerability index that reflects SIDS' environmental as well as socio-economic vulnerabilities would allow policymakers, creditors and investors to more accurately understand the context of SIDS and address their structural constraints. Such a tool could help enable access to concessional finance to support SIDS in addressing their overwhelming debt burdens and the reticence of creditors to extend more favourable terms on existing debt, as well as the sovereign rating downgrades underway or forthcoming. Such a move is essential if SIDS are to overcome the socio-economic shocks caused by the COVID-19 pandemic while safeguarding progress made on the 2030 Agenda and S.A.M.O.A. Pathway.

CHAPTER 6. Major actions and support required for the effective implementation of the Global Biodiversity Framework and Agenda 2030 for ocean related SDGs

6.1 Preamble

This chapter aims to elaborate recommendations on the major actions necessary and required support for the effective implementation of the Global Biodiversity Framework and 2030 Agenda for ocean related SDGs.

6.2 Recommended Actions

6.2.1 Action 1 Continue to Monitor the Impact of the Pandemic.

As this study has been completed during an ongoing pandemic it is in effect a scoping report which attempts to identify the initial impacts of the pandemic. The complexity and magnitude of the impact of the pandemic on biodiversity and sustainable development on the islands in the WIO region will likely only really become apparent in the coming years. There is therefore a need to establish a framework through which to monitor the situation to detect and track impacts at the national and regional level over the mid- to long-term.

6.2.2 Action 2 Support for re-alignment of NBSAPs and review of national policy coherence.

The WIO-islands all successfully completed the revision and updates to their NBSAPs following COP-10, which included the development of national targets in response to the Strategic Plan for Biodiversity 2011 to 2020. The WIO-islands submitted their NBSAPs to the CBD between 2015 and 2017 and 6NR.

The upcoming post-2020 GBF will require the countries to update their NBSAPs in line with the new post-2020 GBF targets, and to start reporting on "new" indicators / targets. Given that government staff on islands are invariably overstretched pre-COVID, and more so post-COVD, they would benefit from support in this process. Partners could assist by providing support for:

- A regional review to map the existing national targets (NBSAPs), national policies, and to check coherence with respect to existing SDG14 and new GBF targets (and other MEAs as appropriate), with the purpose of identifying gaps / weaknesses to be addressed.
- Preparation of strategic tools to guide the countries in the re-alignment with existing SDG14 targets and new ocean related GBF targets (and other MEAs).
- Leveraging direct financial support for the WIO-islands to complete the process of updating / reviewing NBSAPs.

6.2.3 Action 3 Provide guidance and support for monitoring and reporting (national).

The rapid review of the 6NR for the WIO-islands identified a lack of internal capacity and resources needed to support the implementation of environmental monitoring programmes to collect the data

needed to report on progress towards the targets included in Strategic Plan for Biodiversity 2011-2020. Some countries also appeared to struggle and/or were confused about what should be reported upon.

The CBD has been working with the BIP and UNBiodiversityLabs, among others (e.g., DaRT and Informea) to prepare tools to help reduce the burden on the countries in preparing their 6NRs, and this work is continuing through the post-2020 negotiations. These types of tools could help the WIO-islands to meet their reporting requirements, while also reducing the burden on government, especially where there is no data available.

Interestingly, only one WIO-island used the 6NR Clearing-House Mechanism (CHM) to submit their reports (Mauritius), and none of the countries used global datasets prepared by BIP or UN Biodiversity Labs in their reports. The real reason for this lack of uptake is unknown, but it is probably worth exploring further. It could, for example, be due to a fear of change or move away from the norm, internet issues, a lack of awareness of the availability of or understanding of the appropriateness of these globally aggregated datasets, the existence of better (i.e., higher resolution / more accurate / more trusted, nuanced) datasets at the national level, or other reasons.

Feedback on national experiences in developing national CHM websites have *"revealed that significant technical barriers exist when trying to establish even a basic national CHM website, particularly for developing countries with little capacity"*[104], which was the justification for developing DaRT.

Either way, further support will be needed, first to understand the concerns / reluctance of the countries to make use of the global monitoring and reporting tools, then to provide training to increase harmonisation of the reports produced through these processes. Partners could provide support for:

- A comparative assessment of the global datasets / tools now available against existing national datasets, where available, to help determine their suitability for use in national reporting.
- Eventually, training will also be needed in how to use these strategic tools for monitoring and reporting on those targets included in the post-2020 GBF, SDGs and other relevant MEAs. Partners could provide support for:
- The preparation of additional strategic tools and training for monitoring, evaluation, reporting processes (e.g., CHM, noting that only Mauritius used the Clearing-House Mechanism for submission of the 6NR).
- Direct support for the WIO-islands for M&E and reporting processes for new GBF targets.

6.2.4 Action 4 Provide guidance and support for monitoring and evaluation (regional).

Encouraging countries within the Nairobi Convention to adopt a more consistent approach to reporting and the use of the global datasets, or at least a subset of these global dataset / reporting tools, would enable more consistent and harmonised reporting at the regional level, and facilitate the preparation of regional reports, such as the Status and Outlook reports. Partners could provide support for:

- Regional processes to seek agreement between the countries on the indicators and source data to be used to report on GBF targets (and other MEAs as appropriate).
- Provision of additional guidance and support to ensure regional consistent reports / formats.

[104] https://dart.informea.org/tools

6.2.5 Action 5 Provision of support for integrated island ecosystem planning

The recommendations included in the WIO MPA Outlook recognised the need for ongoing support for Marine Spatial Planning and integrated land-sea planning to include MPA network components. The WIOSAP project is also currently supporting Marine Spatial Planning. For the islands, there is a greater and more specific need for integrated planning frameworks that take into consideration both the terrestrial and marine realm, due to the closer interdependencies between the land and sea and environmental flows. Partners could support by:

- Preparing guidance for the integrated planning of island ecosystems.

6.2.6 Action 6 Longer term phased programmes to support planning through implementation.

The amount of time required to undertake planning processes, whether for MPAs, MSPs, ICZM, or integrated land-sea planning, should not be underestimated. The complexities involved in each stage in these processes, from the initial data collection, through to stakeholder consultations, means that they need time and sufficient resources. Partners could assist by supporting:

- Longer term (possibly phased) programmatic approaches to provide more consistent and secure funding cycles and support for island planning processes, from the initial stages of plan development through to implementation.

6.2.7 Action 7 Provide support to improve Protected Area Management Effectiveness

One of the main benefits of conducting management effectiveness assessments is that it can help to identify weaknesses in MPA management systems where interventions and investment are needed. Priority actions can then be formulated to strengthen management effectiveness. Regional level assessments can be used to identify collective weaknesses and training and capacity programmes developed accordingly. Following the recommendations provided in the WIO MPA Outlook and taking into consideration of the post-2020 framework, partners could support by:

- Facilitating better application of the best science, technical and policy advice on MPAs, MPA networks, and the global system by strengthening collaboration efforts between MPA practitioners, academia and other relevant partners like WIOMSA.
- Facilitating the development and sharing of knowledge on MPAs through the well-established MPA management networks that exist in the region.
- Support for training and capacity building at all levels to address the variety of challenges to increase social responsibility among institutions and communities, and strengthen the regional commitment to conservation and resource management.
- Development of guidelines and assess social equitability in the region's MPAs.
- Development a regional approach and programme to sustain systematic monitoring and evaluation efforts across all important sites, and regularly conduct MPA management effectiveness assessments using agreed approaches that also describe biodiversity outcomes.

6.2.8 Action 8 Support for entrepreneurship and innovation.

The population of the WIO region and the workforce is expected to grow by 50 per cent in 15 years. While population growth rates on the islands of Seychelles and Mauritius are much lower than Comoros or Madagascar the population within the region is nevertheless still growing. Education and skills based

training will be needed to support and fuel the Blue Economy. There will be a need for technical skills, innovation and entrepreneurship, for social and economic development. A capacity building strategy should be developed at both the national and regional levels.

6.2.9 Action 9 Build on existing and support new collaborations and partnerships

There is the need to strengthen bilateral and multilateral cooperation in the region to support sharing roles and responsibilities to manage the WIO more effectively. Partners could consider supporting two new initiatives, that are aiming to promote greater regional collaboration, both of which are being led by Seychelles.

6.2.9.1 The Western Indian Ocean Resilience Partnership Initiative (WIO-RPI)

WIO-RPI is regional initiative being developed by the Danny Faure Foundation of Seychelles. The goal of the WIO-RPI is for WIO Governments to co-create and implement an ambitious new regional ocean strategy and policy to continue to support sustainable ocean development underpinned by science-based management and protection. The WIO-RPI encompasses a) enhanced marine science b) sustainable blue growth c) strengthen resilience and restoration d) advancing governance for sustainable management and protection. The project will be presented at the Nairobi Convention Conference of Parties (COP10) for review and commitment.

6.2.9.2 The Great Blue Wall Initiative[105]

The Great Blue Wall is a model for building climate resilience and livelihoods as well as managing the sustainable use and restoration of marine ecosystems worldwide. Under the initiative countries will designate seascapes as IUCN Category VI conserved areas, which allow for sustainable use of natural resources to benefit local communities. Countries will also identify sites for conservation and restoration to achieve net gain of critical ecosystems like mangroves, seagrass meadows and coral reefs by 2030. These seascapes will form a connected network of conserved areas that will deliver conservation, boost livelihoods, and help strengthen resilience to climate change. This will contribute to achieving 30% marine conserved area coverage by 2030 while also supporting local communities' livelihoods by accelerating the development of a regenerative blue economy. Local stakeholders, including indigenous people and local communities, will play a critical role in the governance and effective management of the network, and will be supported in their efforts to sustainably benefit from natural resources.

[105] https://www.iucn.org/news/eastern-and-southern-africa/202110/great-blue-wall-initiative-accelerate-blue-economy-region

APPENDICES

Appendix 1 Country profiles

Comoros[106]

Least Developed Country Category: Comoros Profile

* Data from the 2021 triennial review
Comoros Snapshot in PDF

LDC status

Inclusion: 1977
Graduation: Met the criteria for the first time in 2021

Reports and resolutions

Inclusion

CDP report: 1977
GA resolutions: A/RES/31/40, A/RES/32/92

Graduation

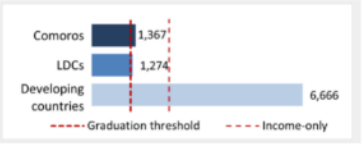
CDP report: 2021

Gross national income (GNI) per capita*

Value: $ 1,367

Thresholds

Inclusion:	$ 1,018
Graduation:	$ 1,222
Income-only graduation:	$ 2,444

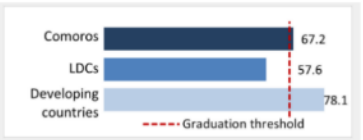


Human assets index (HAI)*

Index: 67.2

Thresholds

Inclusion:	60 or below
Graduation:	66 or above



HAI indicators

Under-five mortality rate
Value: 62.9
Index: 67.9
Source: UN IAG for Child Mortality Estimation

Prevalence of stunting
Value: 23.7
Index: 57.6
Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates

Maternal Mortality Rate
Value: 273
Index: 77.6
Source: UN IAG for Maternal Mortality

Gross secondary school enrolment ratio
Value: 59.5
Index: 55.0
Source: UNESCO

Adult literacy rate
Value: 58.8
Index: 45.1
Source: UNESCO

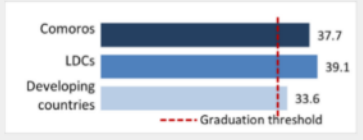
Gender parity index for gross secondary school enrolment
Value: 1.07
Index: 100.0
Source: UNESCO

Economic and environmental vulnerability index (EVI)*

Index: 37.7

Thresholds

Inclusion:	36 or above
Graduation:	32 or below



EVI indicators

Share of agriculture, forestry and fishing in GDP
Value: 34.0
Index: 55.9
Source: UN/DESA, Statistics Division

Remoteness and landlockedness
Value: 64.0
Index: 67.5
Source: CDP

Merchandise export concentration
Value: 0.67
Index: 67.6
Source: UNCTAD

Instability of exports of goods and services
Value: 5.1
Index: 10.3
Source: UN/DESA, Statistics Division

Share of population in low elevated coastal zones
Value: 3.2
Index: 9.2
Source: CIESIN

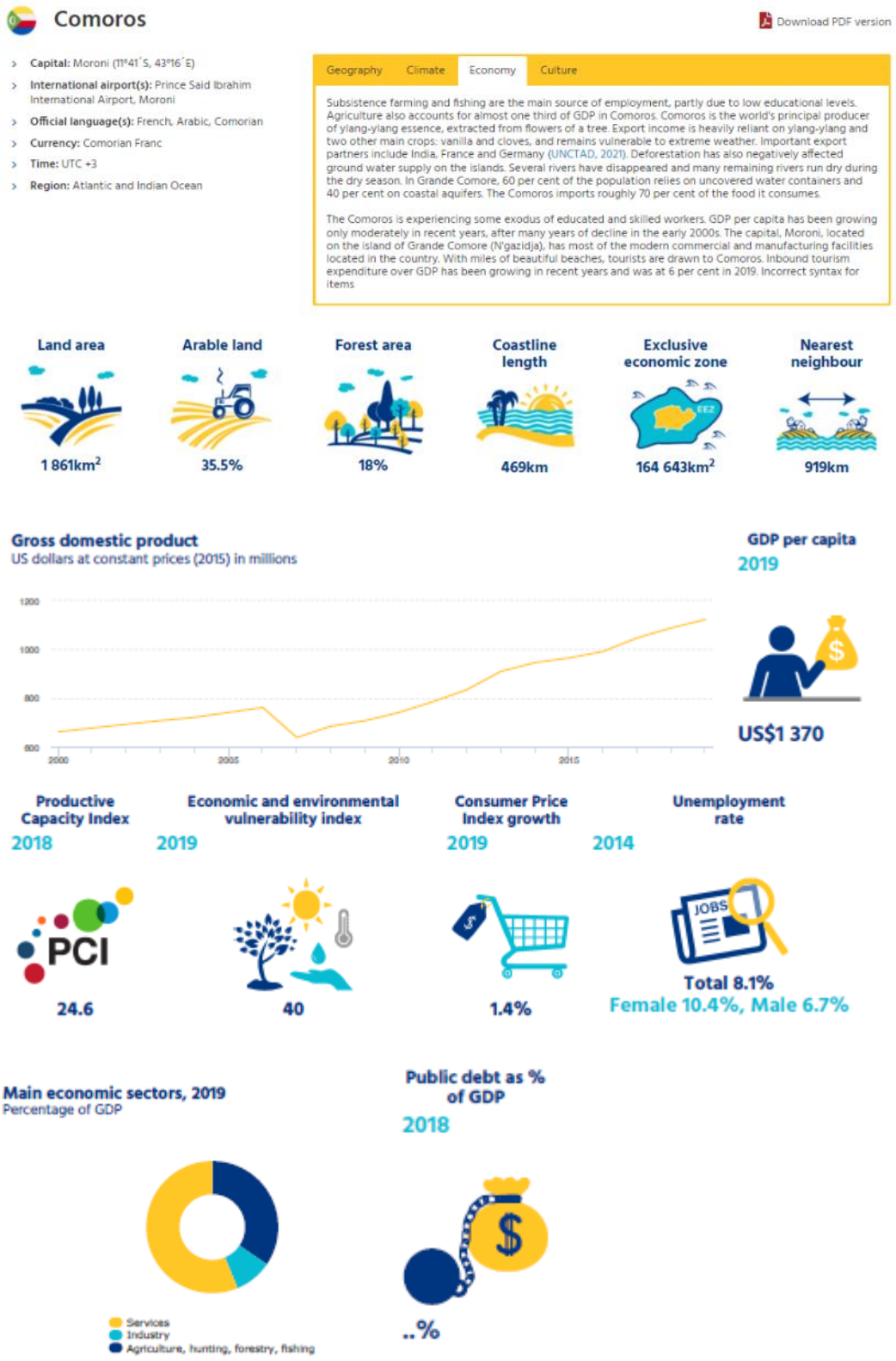
Share of population living in drylands
Value: 0.0
Index: 0.0
Source: CDP

Instability of agricultural production
Value: 1.4
Index: 0.0
Source: FAO

Victims of disasters
Value: 4.95
Index: 90.7
Source: EM-DAT

[106] https://www.un.org/development/desa/dpad/least-developed-country-category-comoros.html

Comoros[107]



[107] https://dgff2021.unctad.org/unctad-and-the-sids/

Madagascar[108]

Least Developed Country Category: Madagascar Profile

* Data from the 2021 triennial review
Madagascar Snapshot in PDF

LDC status

Inclusion: 1991

Reports and resolutions

Inclusion

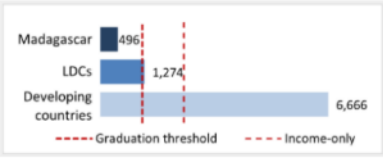
CDP report: 1991
GA resolution: A/RES/46/206

Gross national income (GNI) per capita*

Value:	$ 496

Thresholds

Inclusion:	$ 1,018
Graduation:	$ 1,222
Income-only graduation:	$ 2,444

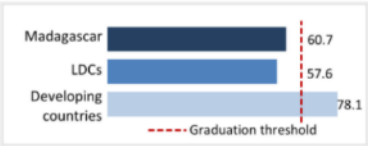


Human assets index (HAI)*

Index:	60.7

Thresholds

Inclusion:	60 or below
Graduation:	66 or above



HAI indicators

Under-five mortality rate
Value: 50.6
Index: 75.4
Source: UN IAG for Child Mortality Estimation

Gross secondary school enrolment ratio
Value: 34.6
Index: 27.3
Source: UNESCO

Prevalence of stunting
Value: 41.3
Index: 22.5
Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates

Adult literacy rate
Value: 74.8
Index: 66.4
Source: UNESCO

Maternal Mortality Rate
Value: 335
Index: 72.4
Source: UN IAG for Maternal Mortality

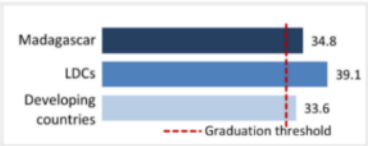
Gender parity index for gross secondary school enrolment
Value: 1.04
Index: 100.0
Source: UNESCO

Economic and environmental vulnerability index (EVI)*

Index:	34.8

Thresholds

Inclusion:	36 or above
Graduation:	32 or below



EVI indicators

Share of agriculture, forestry and fishing in GDP
Value: 25.1
Index: 40.8
Source: UN/DESA, Statistics Division

Share of population in low elevated coastal zones
Value: 4.3
Index: 12.3
Source: CIESIN

Remoteness and landlockedness
Value: 68.8
Index: 73.5
Source: CDP

Share of population living in drylands
Value: 7.5
Index: 7.5
Source: CDP

Merchandise export concentration
Value: 0.32
Index: 26.3
Source: UNCTAD

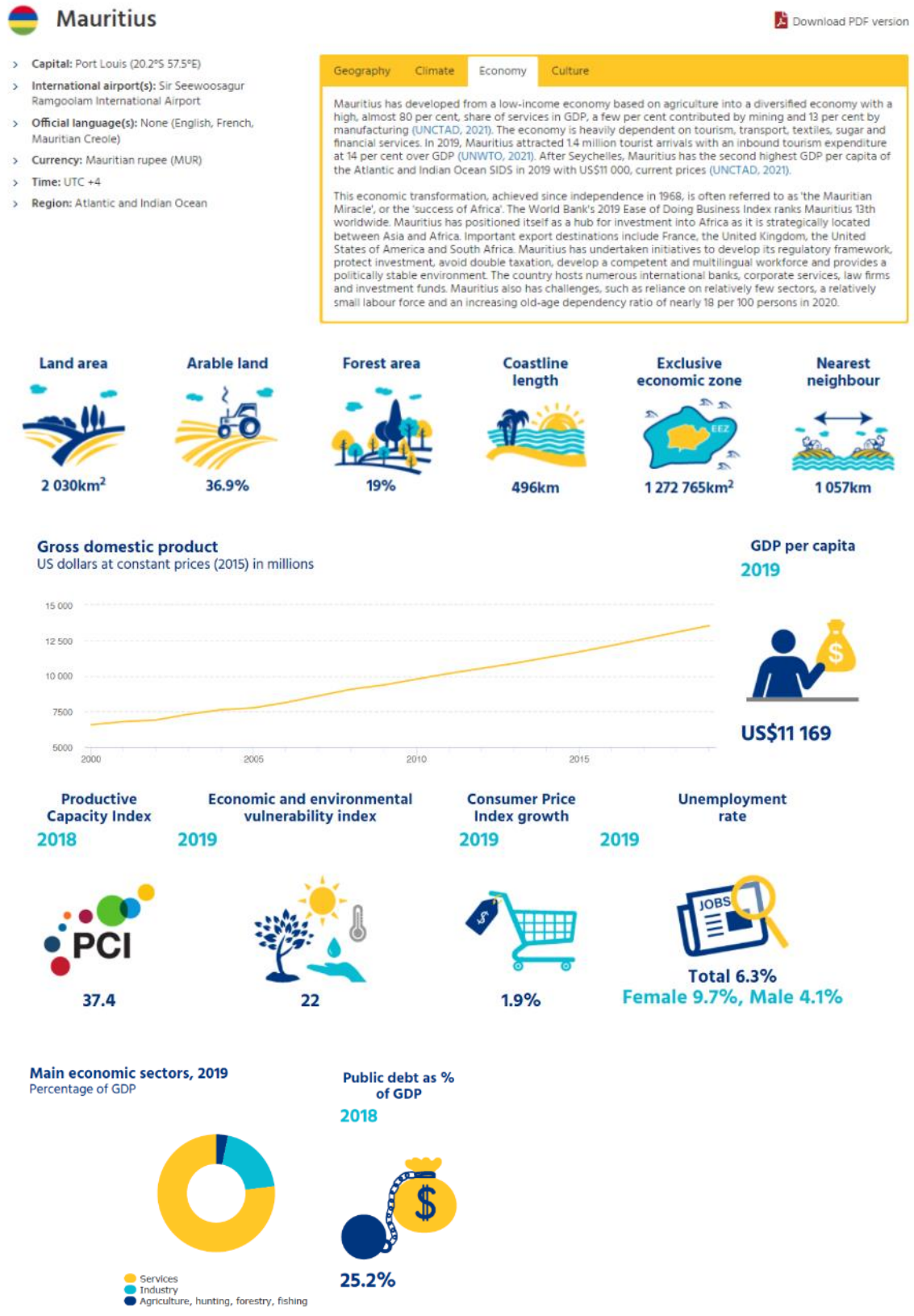
Instability of agricultural production
Value: 4.1
Index: 13.8
Source: FAO

Instability of exports of goods and services
Value: 11.7
Index: 23.5
Source: UN/DESA, Statistics Division

Victims of disasters
Value: 2.34
Index: 80.9
Source: EM-DAT

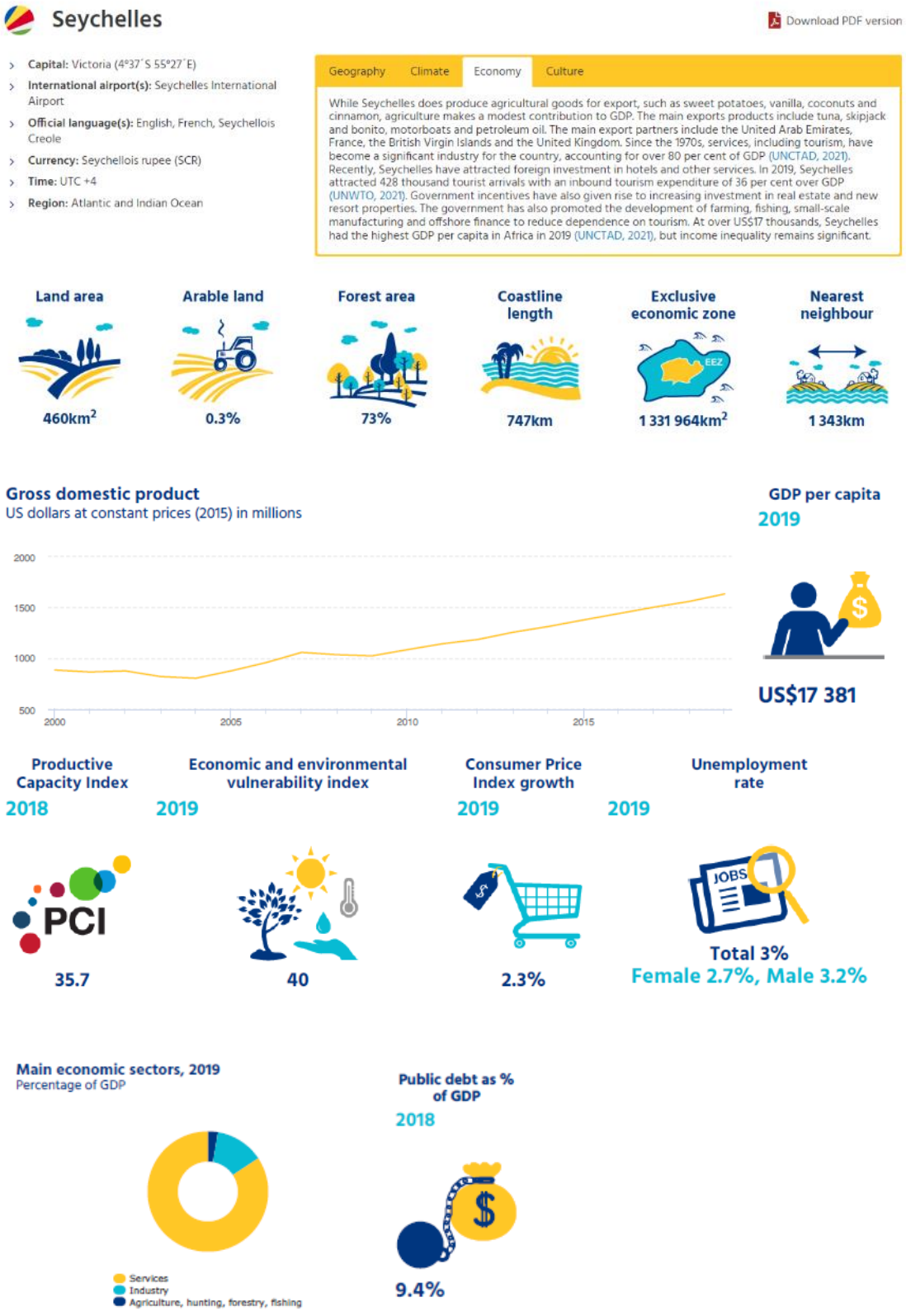
[108] : https://www.un.org/development/desa/dpad/least-developed-country-category-madagascar.html

Mauritius[109]



[109] https://dgff2021.unctad.org/unctad-and-the-sids/

Seychelles[110]



[110] https://dgff2021.unctad.org/unctad-and-the-sids/

Appendix 2 Progress towards Aichi Biodiversity Target and SDG14

Table A2.1 Pre-COVID progress towards Aichi Biodiversity Target 8 (SDG Target 14.1) in WIO-Islands.

	**Target 8** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
	**SDG 14.1**. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	**Indicator 14.1.1**: Index of coastal eutrophication and floating plastic debris density

COMOROS 6NR[111]	MADAGASCAR 6NR[112]	MAURITIUS 6NR[113]	SEYCHELLES 6NR[114]
No significant change	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate
Developing actions to fight, prevent and mitigate the consequences of solid and chemical wastes on ecosystems. Environmental assessments, policies and programs will also be needed to improve the health of ecosystems and biodiversity conservation. Indicators used in this assessment - animation of a partner engagement and fundraising workshop for the conservation and sustainable management of the PA system - celebration each year of the international day of biodiversity; International Environment Day, International Wetlands Day;	Despite the wide distribution of waste of different origins in different places, the fight against pollution has not progressed much. Many international conventions have been ratified by Madagascar concerning pollution and the country must progress in the related commitments. The measures taken can be assessed as follows: -Members of the environmental unit at the level of the Technical Services concerned (Commerce, Agri, Fisheries, etc.) and farmers have been sensitized and trained on the use of pesticides. -In order to mitigate the effect of pollution, the Technical Assessment Committee (CTE), under the aegis of ONE, undertook	The enactment of the Use of Pesticides Act 2018 (No. 8 of 2018) has reinforced the legislation to regulate, control and monitor the use of pesticides in the Republic of Mauritius. The main objective is to regulate, control and monitor the importation and use of pesticides in or on certain fresh fruits, plants, seeds or vegetables with a view to, inter alia, minimising risks to human health and the environment. The Act makes provision for the setting up of a PESTICIDES REGULATORY OFFICE which has been set up and is housed within the Ministry of Agro-Industry and Food Security.	There is no national monitoring regime or database on ambient environmental quality so it is not possible to ascertain changes in that status or determine whether the current situation is detrimental to ecosystem function. As such there is no database or baseline on the ambient environmental quality. Permissible effluent standards are however stipulated in the Environment Protection Act (GoS 1995). Seychelles' small population, limited industrial base and isolation from exterior pollution sources means that in general it is believed that ambient environmental quality is in general good. Records are maintained on chemical imports but the information provided for

[111] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[112] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[113] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[114] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

- commercials; - eight documentary films related to the environment produced (forest rehabilitation - various publications on biodiversity (other research institutions; websites); -Only the document of indicators for monitoring and evaluating progress in the NBSAP artwork was used. -The assessment of the progress made towards this objective was based on the results achieved by report on activities carried out. -The other means used are the end of projects reports -The evaluation was made on the basis of the results achieved in relation to the activities planned for this goal.	environmental assessments of projects likely to adversely affect the environment; Specific studies aimed at the management of urban pollution have been carried out, in particular development studies of the Andoharanofotsy landfill sites, and that of the wastewater treatment plantcity of Tulear (in progress); With regard to sanitation, the significant achievements are: the development of Sanitation master plans for the eight secondary towns of Madagascar (SDAUM) and the Antananarivo Integrated Sanitation Program (PIAA), as well as the fight against open defecation free, the management of hazardous / hazardous waste is an ongoing program. Some of the obstacles mentioned include: Lack of control, monitoring and evaluation of activities (technical, scientific, organizational) Technical skills and limited resources for environmental monitoring actions management of complaints and various analyzes (wastewater, various discharges, etc.); Budget lines for pollution management are almost non-existent, so the financial and technical resources are insufficient to ensure controls and monitoring of waste toxic; Funding to ensure effective waste management in cities remains insufficient- Some companies do not respect the commitments contained in their specifications environmental.	The PESTICIDES REGULATORY OFFICE is mandated to: (a) regulate, control and monitor the use of pesticides in or on any agricultural produce; (b) develop strategies for the sound use and management of pesticides and for risk reduction associated with the use and disposal of empty pesticide containers; (c) keep relevant information on pesticides; (d) devise a Pesticides Code of Practice; (e) advise the Minister on any matter related to the use of pesticides; (f) do such other things as may be necessary for the purposes of this Act. The Act empowers the Ministry responsible for agriculture to conduct regular official monitoring of agricultural crops; the use of pesticides; obtain, without payment, a sample of the agricultural produce for the purpose of examination, analysis or testing of sample in a laboratory for determining the residue level of pesticides it contains and serve a notice on the owner or person in charge of the land or premises, or seller, for any non-compliance with respect to pesticide use	this assessment did not separate imports by usage or, in many cases, provide the actual amount or chemical composition of the product. There is also no comprehensive database on chemical storage sites and their location. Records are maintained of detected pollution events, but this information is not publicly available and is not compiled into databases to enable assessment of change in occurrence. Neither is there mapping of pollution or sedimentation events which would assist in the development of baselines from which to target action and judge the efficacy thereof. There are however various national initiatives targeting the reduction of pollution in Seychelles. These include: Priority areas are monitored for effluent standards such as: large hotel sewerage treatment plants, public sewage treatment plants, major factories e.g. the Indian Ocean Tuna factory complex at Port Victoria and the main landfill site at Providence. There are tax exemptions for the purchase and importation of equipment for recycling operations e.g. scrap metal, glass et cetera. No assessment of perverse incentives has been undertaken however. There is a national PET bottles and aluminium can redemption scheme, the programme uses a partial refundable deposit to divert about 18 million PET bottles from the landfill every year (GoS 2014b). There is a plan for monitoring ambient environmental quality but in reality there is insufficient capacity to undertake it. There are only three pollution officers on staff and the section in question no longer has a

	-Organic products are relatively less developed and unknown and awareness raising dreadful are still insufficient The divergence of the aims of the sectoral policy (Agri, Fisheries, Mines, Oil, Development of the Territory, Environment) remains a major obstacle and prevents the development of a holistic view of development. - Environmental and social measures and obligations of projects / programs included in environmental specifications are not fully respected (avoidance, attenuation, compensation, etc.).- The information contained in the environmental assessment documents (Assessments Strategic Environmental, EIA, Compliance, Engagement Program Environment a) are not generally accessible to all, even for the administration regional / local and the local population affected by the projects;		mobile laboratory but rather must seek to undertake testing through laboratories held by other agencies with differing priorities. Single-use plastic bags were banned in 2017 nationally and there are proposals underdevelopment and consideration to phase out the use of other non-biodegradable single-use items such as plastic straws. The Ministry of Environment (MEECC) through its Waste, Enforcement and Permit Division screens applications for chemical imports and controlled substances entering the country through this mechanism. The national Public Utilities Corporation (PUC) has a sanitation masterplan which is actively extending the integrated sewage treatment throughout the Seychelles. The Ministry of Environment, Energy and Climate Change (MEECC) banned the importation and use of plastic bags, single use plates, cups and utensils and Styrofoam takeaway boxes in 2017, through the development and implementation of two sets of regulations under the Environmental Protection Act (EPA). Following cabinet approval, MDAs supported this initiative by switching from using plastic to reusable options in the work place. This includes replacing plastic water bottle in meeting rooms with other alternatives such as reusable glass bottles or water dispensers. In 2019, MEECC extended the ban to include the importation and use of single use plastic straws. Consequently, businesses started using creative alternatives, such as bamboo or pasta straws.

			Seychelles has also shown its commitment to protecting the marine environment by signing four more legal acts of the International Convention for the Prevention of Pollution from Ships (MARPOL) in December 2019.Seychelles has also committed to the Ellen MacArthur Foundation, and has become a permanent member of the Plastic Waste Partnership under the Basel Convention, as well as the Ad Hoc Open Expert Working Group on Marine Litter and Microplastic. The Ocean Project (TOP) Seychelles is an NGO that was established in November 2016 with the aim of improving the health of the ocean, specifically with regard to plastic pollution. TOP organizes beach clean-ups, conducts research on marine litter, leads anti-littering campaigns and screens films related to marine pollution. In 2020 TOP had a series of art installations made from plastic debris to educate and raise awareness about the threats of marine debris.

Table A2.2 Pre-COVID progress towards Aichi Biodiversity Target 11 (SDG Target 14.5) in WIO-Islands.

	**Target 11** By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	(a) Area (b) Effectively (c) Equitably (d) Ecologically representative (e) Connectivity **(f)** Other effective area-based conservation measures
	**SDG 14.5**. By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	**Indicator 14.5.1:** Coverage of protected areas in relation to marine areas

COMOROS 6NR[115]	MADAGASCAR 6NR[116]	MAURITIUS 6NR[117]	SEYCHELLES 6NR[118]
No significant change	On track to exceed target	No significant change	On track to exceed target (Area) Progress towards target but at an insufficient rate (Effectiveness)
The desired result is the creation of new protected areas in the ecological zones of high density and the extension of existing protected areas with the development of sustainable activities generating income, in favour of neighboring communities.	A Protected Area is a delimited territory, terrestrial, marine, coastal, aquatic whose components present a particular value in particular biological, natural, aesthetic, morphological, historical, archaeological, religious or cultural, and which requires, in the general interest, multifaceted preservation; It is managed for the protection and maintenance of biological diversity, conservation of the particular values of natural and cultural heritage and sustainable use natural resources contributing to poverty reduction;	For marine biodiversity, the UNDP Mainstreaming Biodiversity Management into the Integrated Coastal Zone Areas proposed the setting up of new Marine Protected Areas.	The Seychelles Marine Spatial Planning Initiative has meant that Seychelles has significantly surpassed the target for coastal and marine areas in all aspects except for that of effective management. This because in 2018 Seychelles marine protected area increased from 0.04% of marine area to 15%. Such a vast increase requires an equivalent increase in management capacity and this will take some considerable time to realise. The process has begun to address this with the stakeholder elaboration of a governance structure for submission to government.

[115] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[116] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[117] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[118] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

	Currently, Madagascar has 127 protected areas covering an area of approximately 7 million ha. The measures taken are: A challenge was launched at the last World Parks Congress in Sydney to triple the size of the marine protected areas in Madagascar. Some sites are still being set up and others in extension phase. The management structure is strengthened and the participation of local communities are obvious. Case of marine protected areas managed by Blue Ventures: - Barrens Islands MPA: characterized by a system of local governance ("dina", Plan development and management). Part of the 4317 km2 PA is managed by indigenous communities. Preliminary delimitation, mapping of seagrass and coral reefs, fishing areas traditional and permanent and temporary reserves were made after consultations and public validations The decision-making process is participatory with a strong involvement of the association co-manager of the AMP. - AMP Velondriake: the pre-assessment was carried out by MSC teams at AMP level. Temporary octopus reserves and permanent marine and mangrove reserves have been put in place. The management structure is made up of a managing community association, a dina executive committee independent of the managing association and a monitoring and evaluation committee (CSE) of the area. The MPA has an area of 63,983 ha, including 1,795 ha mangrove forest (5 ha cores hard),		In the meantime the management of, by far, the largest pre-existing MPA of Aldabra Atoll has recently been assessed as 'Highly effective" by an IUCN global assessment. Addendum to 6NR: By March 2020, Seychelles had designated 30 percent of its EEZ as protected marine areas, tripling the UN CBD Target 11 for 10 percent marine protection by 2020, and the UN SDG-14.5 for 10 percent coastal and marine protection. Seychelles with an EEZ of 1 374 000km2 and a land mass area of 455km2 achieved this milestone through the debt for nature swap spearheaded by The Nature Conservancy (TNC).

	3,449 ha of reefs (63 ha preserved) and 1,779 ha of seagrass beds; - Tsimipaika Bay: permanent reserves have been set up with the development o f PAG, TGRN including priority management measures A guide to good practices has been carried out to protect, enhance and reduce post-capture losses of target species such as crabs. Other marine protected areas - Extension of the Ambodivahibe MPA in progress and integrates the Far North East landscape of Madagascar and the Ramena Complex - Appropriation of the MPA by local communities - Proposal for the first marine world heritage site in the north of Madagascar (Nosynaka), initiation to the IUCN green list for 15 PAs The development of management tools for Protected Areas		

Table A2.3 Pre-COVID progress towards Aichi Biodiversity Target 6 (SDG Target 14.7) in WIO-islands.

	**Target 6** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.		
	**SDG 14.7**. By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	**Indicator 14.7.1:** Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries	
COMOROS 6NR[119]	MADAGASCAR 6NR[120]	MAURITIUS 6NR[121]	SEYCHELLES 6NR[122]
Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Moving away from target
This involves determining the impact of human activities on coastal and marine ecosystems, put in place integrated management measures and ensure the monitoring of environments ..	Whether for marine fishing and inland fishing, the provision of information and / or tools to all stakeholders necessary to improve the rational and sustainable management of fishing is very important. The existence of Fisheries Management Plans in certain areas (Melaky, BATAN in the North, Antongil Bay) helps to standardize approaches for the sustainable management of fisheries. However, the updating and effective application of legal frameworks and regulations relating to fisheries management is essential. The measures taken are:-	The UNDP-Joint Management Area (JMA) Demonstration Project aims at consolidating existing databases and elaborate further on the framework for data and information management. So far the following progress has been achieved: Marine Spatial Planning (MSP) Framework, Roadmap for MSP completed. Geospatial platform set up using ArcGIS. Key factors for future JMA Scenarios identified such as petroleum exploration and production, exploration and production of seabed minerals, and conservation and exploitation of sedentary marine species. Capacity building in MSP and in Area	Progress has been made in terms of establishing an enabling policy and legislative framework for sound fishery management this includes: the 2014 Fisheries Act which sets the framework for fishery co-management, the Mahé Plateau demersal fishery plan, the ongoing development of the Seychelles Marine Spatial Plan which will provide differing degrees of protection to 30% of the Country's waters, the development of the Blue Economy Roadmap for Seychelles and the development of highly innovative new financing mechanism to support marine conservation, sustainable use and research.

[119] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[120] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[121] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[122] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

	Support for communities with the strengthening of systems for improving the fishery sustainable and community fisheries; -Inventory management and pressure reduction; -Equitable sharing of benefits between small-scale fishing and industrial fishing;-Improving the access of riparian communities to resources and limiting overfishing of immigrant fishermen; -Improved knowledge of water and wetlands as well as resources sheltered in these ecosystems; -Prevention of damage caused by bad fishing practices. Some cases in certain protected sites and / or sustainable management sites show the following actions: Tsimipaika Bay-Spatial delimitation of fishing areas and conservation areas, -Socio-economic surveys among fishermen and households on their perception of the state before and current marine resources as well as the vectors and underlying causes of degradation of mangroves -Mapping of the management area integrated in the Development Plan AMP Velondriake: -Conceptualization and initiation of the second local closure of octopus fishing -Collection of data on the stock of octopus: collection on production, local demand, regional and international -Participatory mapping of octopus fishing sites. AMP Barrens Islands: -Mapping of traditional fishing areas (IB MPA), mapping of fishing areas for crabs, fish and sea cucumbers, studies on the causes	beyond National Jurisdiction being implemented (2 MSP Training and 1 ABNJ Training completed). Data Management System, Draft Hardware and Software architecture proposal completed. Management plans for critically threatened marine and coastal biodiversity in progress.	These activities bode well for the future, but current trends in fishery catch, specific catch management initiatives and ecosystem quality continue to be negative. Breaking down the elements of this target is illuminating (for further details see NR6). In Seychelles, aquaculture has been practiced on a small scale for over 30 years. There is a black tiger prawn farm on Coetivy island that was established in 1989, while pearl (oyster) farming was established in 1995. Recently, more efforts are being put into expanding aquaculture, in line with Seychelles' strategy of diversifying exports. The Aquaculture Section of Seychelles Fisheries Authority was established in 2016 with the aim of managing, coordinating, undertaking research and development, and ensuring that the regulations for aquaculture are properly adhered to.

	of the decline in shrimp stocks, including the impact of trawling, monitoring of catches from traditional fishing in coastal areas and on islands. Belo sur Mer: -Sensitization by MNP for the creation of fishermen's associations, effective creation of associations, capacity building and formalization, establishment of DINA executive committees for the municipality of Belo sur Mer-Implementation of the "Sustainable coastal fishing" program with KFW with the 6 NGO partners		

Table A2.4 Pre-COVID progress towards Aichi Biodiversity Target 19 (SDG Target 14.a) in WIO-islands.

	**Target 19** By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
	**14.a.** Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	**Indicator 14.a.1**: Proportion of total research budget allocated to research in the field of marine technology

COMOROS 6NR[123]	MADAGASCAR 6NR[124]	MAURITIUS 6NR[125]	SEYCHELLES 6NR[126]
No significant change	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate
Emphasis will be placed on strengthening research on the economic potential of species and ecosystems, to encourage the adoption of sectoral policies and practices viable (agricultural practices, urbanization, etc.), with a view to reducing the loss of biodiversity It is about analyzing heritage in terms of what is valuable to make it visible, accessible to better protect it. The databases on biodiversity and the environment are scattered, precarious, lacking in visibility and have limited access. Existing databases are difficult to use because potential users are not familiar with its content or how to access it. situation, the	Objective 19 comprises 8 main activities including: - Develop and implement a capacity building program for the parties key biodiversity stakeholders - Develop and implement training and awareness tools on the objectives and newly adopted biodiversity action plan - Provide training and grant scholarships to broaden knowledge about key aspects of biodiversity - Develop and implement tools to raise awareness and integrate gender equality during the achievement of all the objectives	Although the CHM has been setup, the latter is not or partially being used by stakeholders in both Mauritius and Rodrigues and the contents has not been updated since its creation.	The National Institute of Science, Technology and Innovation (NISTI) was founded in 2014. Its objectives and functions include: ensure the resources which shall support the development of science, technology and innovation; collaborate with international research institutions, business enterprises, and national expertise in developing a competent regional knowledge cluster in science, technology and innovation; improve the awareness within the industrial and service sectors of the importance of intellectual property rights; devise strategies to promote education and human capital in

[123] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[124] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[125] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[126] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

Union of the Comoros through the University of the Comoros and the National Research Institute Agriculture, Fisheries and Environment (INRAPE) develops research activities in biodiversity and inventories of the components of biodiversity. Scientific training programs and technique on methods of faunistic and floristic inventory, conservation and surveillance of biodiversity are provided in particular within the framework of licenses in Life Sciences and Liences in Earth and Environmental Sciences and in the Master of Biodiversity. The results of research on biodiversity have been disseminated and popularized.	of the SPANB, valorize the related information - Carry out a review of the relevant knowledge and technologies available in the country as well as that gaps in the knowledge and technologies necessary to implement the Convention on Biological Diversity - Operationalize the clearinghouse (CAE or environmental exchange platform) to improve access to knowledge and technologies - Establish regulatory frameworks for research in flora and fauna and develop a biodiversity data repatriation system - Strengthen the technical capacities of the various actors concerned to ensure and support the sustainable management of natural resources The justifications for the progress achieved so far are: - Monitoring of the state and trend of biodiversity through the various tools developed (e.g. the participatory monitoring of reefs in Ambodivahibe with Reef Check) - Scientific research carried out by various researchers, in particular those from the universities of Madagascar. The results of this research are necessary to ensure decision-making reasoned in terms of biodiversity preservation (eg conservation targets). These are also essential tools for updating the development and management plan of each PA - Various cascading trainings at the place of actors working in the field of biodiversity - LMD system set up in the Six Universities of Madagascar,		science, technology and innovation promote science, technology and innovation approve and coordinate scientific research programs and activities at national level ensure collaboration and cooperation between organisations engaged in science, technology and innovation to minimise duplication of functions and inter-organisational conflicts. Take measures for protection of intellectual property rights of persons making research and innovation and advise the government from taking any policy and legislative measures; maintain and publish scientific literature and research, carried out locally; develop and promote indigenous knowledge and technologies; ensure that development in science, technology and innovation is people centred as well as environment centred for the sustainability of the country's overall development; establish a research and development centre to support science, technology and innovation. In 2018, NISTI announce the establishment of a knowledge management platform - with the professed objective of ensuring that research outcomes, reports and meta data in Seychelles are curated, documented, archived and available for access to all researchers, as well as science, technology and innovation stakeholders at national, regional and international levels. Other key governmental agencies that store and maintain data relevant to this target are, in no particular order, Seychelles Fishing Authority, National Bureau of Statsistics, Seychelles Bureau of Standards, the

	- Establishment of database systems on biodiversity (MEEF / FAPBM project, MEEF / ARSIE, REBIOMA, GBIF ...., BNCREED +, ...) - Active contribution to national and international networks on Biodiversity - Systematic acquisition of databases on PA fauna and flora - Existence of information, awareness and education tools, database and reports		National Archives, Ministry of Environment, Energy and Climate Change (MEECC), the UNDP/MEECC Project Coordination Unit and the Seychelles Island Foundation. In the NGO sector there are several agencies that maintain important databases notably but not limited to: Nature Seychelles, Marine Conservation Society Seychelles, Island Conservation Society, Save Our Seas Foundation (Darros) and the Green Islands Foundation. Finally there are several private individuals with unique knowledge and important databases that are national assets whose information has yet to be mainstreamed. There is no doubt that the knowledge base has expanded considerably in this current reporting cycle in many cases driven by GEF funding and now beginning also to be driven by the nature for debt swap mechanisms. Certain agencies have excelled in publication notably SIF in recent years. Where Seychelles falls short currently is in the sharing, transferring and application of this knowledge. We have examples of data sharing agreements which set out to protect intellectual property rights but it is as yet unclear how successful these will prove to be. Certainly the accessibility of information is often limiting this has been very apparent during this reporting process. Often datasets that are reported as existing can no longer be found, or they are not retained and formatted in a manner that is readily usable. With regard to civil society agencies and individuals that hold datasets, there is a lot of important information that is not shared or available, and existing data

			sharing agreement models do not appear to appeal to these agencies. This is very difficult when funding and resources utilised to gather information have been done entirely privately by the agencies or individuals in question. Indicators used in this assessment Number of national biodiversity -related databases and datasets accessible to the public. Number of data-sharing agreements. Number of scientific publications from Seychelles organisations through time Number of websites with national statistical reports related to biodiversity open to public access. Number of biodiversity -related databases which are private and not accessible. Please describe any other tools or means used for assessing progress N/A Relevant websites, web links and files (Please use this field to indicate any relevant websites, web links or documents where additional information related to this assessment can be found). National Institute of Science, Technology and Innovation act 2014 h

Table A2.5 Pre-COVID progress towards SDG Target 14.c in WIO-islands

	14.c. Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want	Indicator 14.c.1: Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources	
COMOROS VNR[127]	MADAGASCAR VNR[128]	MAURITIUS VNR[129]	SEYCHELLES VNR[130]
Not reported	Not reported	On track	On track
Not reported	Not reported.	As a party to UNCLOS, Mauritius is implementing its provisions and is also adhering to the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas; and Agreement related to the Conservation and Management of Straddling and Highly Migratory. Fish Stocks of the United Nations Law of the Sea (Fish Stocks Agreement) of 1995	Seychelles has shown its commitment to protecting the marine environment by signing four more legal acts of the International Convention for the Prevention of Pollution from Ships (MARPOL) in December 2019.Seychelles has also committed to the Ellen MacArthur Foundation, and has become a permanent member of the Plastic Waste Partnership under the Basel Convention, as well as the Ad Hoc Open Expert Working Group on Marine Litter and Microplastic. Seychelles is working with the UNODC's Global Maritime Crime Programme (GMCP), which is responsible for providing technical assistance to Seychelles to counter transnational organized crime at sea, including illicit activity that could have a direct impact on life below water. Additionally, the GMCP is committed to assisting Seychelles to regulate and combat illegal, unreported and unregulated fishing,

[127] Government of Comoros (2020) Rapport National Volontaire De L'union des Comores Au Forum Politique De Haut Niveau Sur Le Developpement Durable Edition 2020
[128] Government of Madagascar (2021) Deuxième Rapport de Madagascar Pour L'examen National Volontaire Sur Les Objectifs De Développement Durable 2021
[129] Government of Mauritius (2019) Voluntary National Review Report of Mauritius 2019
[130] Government of Seychelles (2020) Voluntary National Review 2020 Republic of Seychelles.

			and other crimes on board fishing vessels. Other crimes can include pollution, destructive fishing practices, and so on. In 2020, the President of Seychelles assented to the Defence (Amendment) Act, thereby providing a legislative framework to govern the activities of the Seychelles Coast Guard. The new framework brings clarity to the duties of the Seychelles Coast Guard while also strengthening their powers to intercept, search and detain vessels suspected of engaging in illegal activities, including illegal, unreported and unregulated fishing.

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Table A2.6 Pre-COVID progress towards Aichi Biodiversity Target 3 in WIO-islands.

	**Target 3** By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.		
COMOROS 6NR[131]	MADAGASCAR 6NR[132]	MAURITIUS 6NR[133]	SEYCHELLES 6NR[134]
Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	No significant change
Union of the Comoros has taken initiatives to strengthen the capacities of local communities the rational use of biological resources for their sustainable use in relation to the commitments made by the country vis-à-vis the biodiversity convention. The factual data illustrating the achievement of this objective include, in particular: - promotion of income-generating activities for localities and municipalities bordering on protected areas - sensitization and training of local communities and ylang ylang distillers to the use of improved stoves and alternative energies to firewood - training of beekeepers on modern beekeeping - some impact studies on biodiversity have been	Incentives and subsidies relate to the development of activities ensuring the conservation and sustainable use of biodiversity. The incentive approaches already used are effective, not to mention that Payments for Ecosystem Services. The measures taken are: - Reduction of the negative impacts of sectoral activities and consideration of biodiversity in development activities: obligation of the EIA for certain large-scale projects, commitment operators and investors (safeguarding activities, Biodiversity Offset etc.); - Capacity building of stakeholders to show the importance of biodiversity; - Development of local initiatives related to this theme: Implementation of AGR (Aquaculture, beekeeping, promotion of eco-tourism);	"In Mauritius and Rodrigues, the Fisheries Division offers certain incentives to the fisher community namely the Bad Weather Allowance and Close Season Allowance. These allowances are not considered to be harmful to marine biodiversity as they are given to registered fishers so as not to capture fish on bad weather days or not to use their nets to capture fish during close season for net fishing".	"Little action has been taken in this domain and this has been noted in other sections of this report". "A key area where perverse incentives have been identified and recommended for removal is the fisheries sector (i.e., SDG 14) (Vivid Economics 2015) but this has yet to be acted upon". "The economics of the Artisanal fishery have been investigated and the fuel subsidy clearly identified as a perverse incentive (Vivid Economics 2015). The Seychelles Fishing Authority has indicated its intention to phase out the subsidy by 2022 however this may change under a current ongoing review by the Ministry of fisheries and agriculture" "The BioFin initiative (Barois 2018) identified the need for assessment in key sectors, namely tourism and agriculture, and scope for positive measures".

[131] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[132] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[133] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[134] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

	Local micro-projects based on compensation activities and alternatives to actions of conservation and non-access to resources. They are effective if the needs of the population are fulfilled. Development of PES mechanisms in pilot sites; compensation for services ecosystem (reforestation upstream of hydroelectric dams), Commitment of political decision-makers in the consultation and decision-making processes decisions (local consultation, beacon installation, national, regional, local validation of the various resource management plans, etc.), Establishment of databases on biodiversity and other natural resources in regional monographs and Regional Development Plans (PRD).		

Table A2.7 Pre-COVID progress towards Aichi Biodiversity Target 10 in WIO-islands.

	**Target 10** By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

COMOROS 6NR[135]	MADAGASCAR 6NR[136]	MAURITIUS 6NR[137]	SEYCHELLES 6NR[138]
Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	Progress towards target but at an insufficient rate	No significant change
The Union of the Comoros today offers an exceptional heritage and natural sites, where primary natural plant formations, humid and lush savannah forests coexist dry and scrubby landscapes and natural coastal habitats including beaches, coasts rocks, islets and mangrove forests. These sets also have species or groups sometimes unique animal and plant taxonomy which give the region its recognition as one of the hot spots for global biodiversity. Human actions having become more and more frequent in recent decades, accentuating the accentuation of the degradation of these ecosystems and the impoverishment of biodiversity and disrupting the already fragile balance of ecosystems, resulting in a significant loss of biodiversity. This situation associated with the effects of climate change makes the different ecosystems. The preservation of ecosystems is considered in the Union of the Comoros as a capital natural environment, the management of which on a	Faced with the current climate change problem, the actions to be taken should be based on this principle: "Avoid the unmanageable and manage the inevitable". Apart from physical solutions to fight against climate change, many stakeholders are opting for nature-based solutions. It is necessary also consider the links between ecosystems that are essential for the resilience of services provided such as coastal protection by mangroves, cultural values and recreation, watersheds and water services. The measures taken are: -Promotion of Marine and Coastal Protected Areas, to maintain ecosystem services and ecological operation, and cope with climate change Different tools and analyzes have been developed to fight against climate change, such as: -Global Learning Opportunities for Regional Indian Ocean Adaptation (GLORIA), Coastal Risk Information Service (an Information Service to support the	Reported on. the number of coral farming projects (governmental institutions and NGO's) implemented by Mauritius Oceanographic Institute (MOI) in collaboration with Ministry of Fisheries and other NGOs from 2015 to date, the area that has been restored (MOI: 1,400 m2 metre with 6,100 aqua-cultured coral colonies) and capacity building with respect to the coral farming projects. Also mentioned Installation of 995 artificial reef units constructed from reef moulds.	"The Seychelles NBSAP (Nevill et al 2015) identified overfishing as the primary threat to marine biodiversity followed by climate change". "To mitigate the impact of climate change on marine biodiversity and coral reef ecosystems it is key that fishing pressure and impact be managed effectively. Physical damage, siltation and reclamation are secondary issues but disproportionately impact reefs of critical habitat importance." "It is estimated that Seychelles has some 1,700 km2 of coral reef (Nevill et al 2015) with the vast majority occurring around the south western islands. Analysis of recent Vessel Monitoring System (VMS) data however, shows significant fishing effort throughout the Mahé plateau indicating that coral occurrence is far more extensive than thought and in particular in what were previously considered as the largely coral free mid-regions of the Mahé plateau. Marine and coastal habitats were described

[135] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[136] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[137] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[138] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

sustainable basis will help to support growth. The SCA2D and the Plan Comores Emergent horizon 2030 adopt a large number of intervention strategies on sustainable land management, water resources management (IWRM) and coastal areas. Studies are underway with a view to establishing a complementary red list to the list of threatened species	management of MPAs), newsletters with time series on the state of ecosystems and the website for daily information on winds, waves, climate (already used in Ambodivahibe) -Projections of the effects of climate change and recent progress in modelling climate change with ocean resources, assessment of ecological sensitivity and highlight species and fisheries that may be most vulnerable to changes climate, definition of key ecological assets for the current modeling of the marine ecosystem, development of conceptual models, etc. Implementation of the Sustainable Coastal Fisheries Project for allow the implementation of adaptation measures at the level of marine and coastal PAs, study of vulnerability of biodiversity and riparian communities in the PA and implementation of measuresadaptation (case of Nosy Hara and Ambodivahibe)-Poverty-related vulnerability assessment, adaptation strategies and adjustment options, identification of perceptions of risks to livelihoods, identification of strategies current and potential adaptation, and identify options and possibilities; -Assessment of perceptions of change and participatory mapping,-Using GIS and other technical tools to capture and map information on communities and resources, and analyze the dynamics and characteristics of the poverty. -Education and awareness to popularize knowledge and information on ecosystems coastal and marine;-Promotion of the local patrol strategy;		in Seychelles' fourth national report to the Convention on Biological Diversity (GoS 2011) and updated and summarised in Seychelles National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020 (Nevill et al 2015). "There is strong evidence to show that the Mahé plateau has been overfished for several decades. Fishery statistics show that the overall artisanal catch peaked in 1991 and has declined steadily since that time."

	-MNP case: Participation in the AfDB PSCR project to identify the vulnerability of biodiversity at 14 APs in the MNP network.		

Table A2.8 Pre-COVID progress towards Aichi Targets 17 in WIO-islands.

	**Tar**get 17 By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.		
COMOROS 6NR[139]	MADAGASCAR 6NR[140]	MAURITIUS 6NR[141]	SEYCHELLES 6NR[142]
On track to achieve target	On track to achieve target	Progress towards target but at an insufficient rate	On track to achieve target
NBSAP Submittal Date 16 September 2016	NBSAP Submittal Date 25 February 2016	NBSAP Submittal Date 20 June 2017	NBSAP Submittal Date 11 August 2015
NBSAP 2011-2020	NBSAP 2015-2025	NBSAP 2017-2025	NBSAP 2015-2020
• NBSAP guided by global Strategic Plan for Biodiversity. • Twenty national targets set in alignment with the Aichi Biodiversity Targets. • Government's intention to gradually transfer conservation actions to the communities (as supported by the Law on Decentralization).	• NBSAP guided by global Strategic Plan for Biodiversity. • Twenty national targets in alignment with the Aichi Biodiversity Targets. • Considers National Environment Management Plan, National Development Plan, and the National Environment Programme for Sustainable Development, among other strategic planning documents.	• NBSAP targets are adapted from the Aichi Biodiversity Targets, (exclude ABT18). Separate Action Plans prepared for Rodrigues. • NBSAP is fully endorsed by the Cabinet. Each partner Ministry and stakeholder is committed to contributing to the national targets (budget, expenses, project KPI). The focal point designates a responsible officer for coordinating and monitoring the NBSAP, and each KPI is monitored on a quarterly basis MoUs are drafted and signed by the focal point and lead stakeholders responsible for implementing each national target. The NBSAP is effectively mainstreamed into policy and sectors (number of	• NBSAP guided by global Strategic Plan for Biodiversity. • Twenty national targets in alignment with the Aichi Biodiversity Targets. • Seychelles Government approved its second generation NBSAP 2015-2020 late 2014. The NBSAP was developed in a participatory, multi stakeholder, bottom-up approach which took over two and half years to finalise. The NBSAP presents 31 projects that cut across several sectors that affect biodiversity in the Seychelles, including Fisheries, Agriculture, Land Use Planning, Biosecuity. • Seychelles is one of the 67 countries with no distinct mention of gender and or women keyword in its NBSAP.

[139] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[140] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[141] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[142] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.

		documented changes in policy and / or practice)	• The NBSAP steering committee membership comprised of 7 women and 12 men and contributors to the overall process involved 47 men and 33 women. • Seychelles has made remarkable improvement in terms of gender reporting, considerations etc. since the development of the 2nd NBSAP. The Gender and Biodiversity Report has been compiled for the first time and will enable gender issues to be included in future CBD and other reporting.
6NR submitted online.	6NR submitted online.	Clearing-House Mechanism used to submit 6NR.	6NR submitted online.

Table A2.9 Pre-COVID progress towards Aichi Target 18 in WIO-islands.

	Target 18 By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.		
COMOROS 6NR[143]	MADAGASCAR 6NR[144]	MAURITIUS 6NR[145]	SEYCHELLES 6NR[146]
No significant change.	Progress towards target but at an insufficient rate	Not reported.	On track to achieve target
By 2030, a knowledge management and sharing system accessible to all will be created to guide actions for the conservation and enhancement of species and diversity genetic. The development, management and implementation of a platform for exchange and sharing knowledge will contribute to awareness of the importance and impact of human action on biodiversity. They will strengthen the integration of the biodiversity in development planning	6NR makes reference to "Legal texts relating to (or partly integrating) traditional knowledge under Decree N° 2017-066 ABS regulations, Law N ° 2013-017". 6NR recognises the importance of the "identification of", "use of" and "protection of" traditional knowledge and practices contributing to conservation and the sustainable use of biological resources. Exploratory studies (e.g. AMP Velondriake in the southwest on the establishment of Vezo).	Not applicable[147].	6NR states "Seychelles does not have indigenous peoples, but as a small country it endeavours to fully recognise the local communities where they are present and the traditional knowledge that they hold".

[143] Government of Comoros (2018) 6ème Rapport National sur la Biodiversite De L'Union des Comores.
[144] Government of Madagascar (2018) Sixth National Report to the Convention on Biological Diversity.
[145] Government of Mauritius (2020) 6ème Rapport National sur la Diversite Biologique De Madagascar.
[146] Government of Seychelles (2020) Sixth National Report to the Convention on Biological Diversity.
[147] The Mauritius NBSAP retained the five strategic goals of the global Strategic Plan for Biodiversity and adapted all corresponding Aichi Biodiversity Targets to the national context, values and interests with the exception of Aichi Biodiversity Target 18, which stakeholders consider to not be applicable to the country in view of the fact that the people are descendants of successive waves of immigrants from various countries.

Appendix 3 Survey Instrument

Impacts of the COVID-19 pandemic on SIDS and their biodiversity within the Nairobi Convention Area

INTRODUCTION

The United Nations has been supporting Small Island Developing States (SIDS) in their sustainable development efforts through the Programme of Action for the Sustainable Development of SIDS finalized at the Global Conference held in Barbados in 1994, also known as the Barbados Programme of Action (BPOA), which was revised in 2005 in Mauritius. In 2014, the international community gathering in Samoa adopted the Samoa Pathway to address the unique challenges faced by SIDS and to support their development. The Nairobi Convention in collaboration with WIOMSA has commissioned a study to document the impacts of the COVID-19 pandemic on the Western Indian Ocean (WIO) Small Islands Developing States (SIDS) and their biodiversity (including impact on the contribution of biodiversity to their economies, livelihoods, society and culture).

AIM OF STUDY

The aim of the study is to:

(1) review the pandemic's implications on progress towards and achievement of the SDG14 Targets, the Aichi Biodiversity Targets, the SAMOA Pathway, SIDS engagement in the Post-2020 Global Biodiversity Framework and negotiations about the international legally binding instrument under UNCLOS on Biodiversity in areas Beyond National Jurisdiction (BBNJ).

(2) document the impacts of the COVID-19 related disruptions on the implementation of biodiversity related projects, which includes, among others, the demonstration projects supported in the WIO SIDS by the GEF funded project on "Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from landbased sources and activities" (WIOSAP).

OUTCOMES OF STUDY

The assessment aims to yield recommendations on mitigating the impacts of the COVID-19 pandemic to "build back better" through enhanced biodiversity conservation and implementation of the Global Biodiversity Framework and Agenda 2030. Findings will provide the basis for the development of a UNEP Strategy on SIDS to enhance sustainable development in response to the indicated global commitments and also support post-COVID recovery interventions.

TIME REQUIRED

We estimate that the survey will require between 1 to 2 hours to complete in full. Instructions on how to complete the survey are provided on the next page. If you have any questions, please feel free to email.

We thank you in advance for your time and support!

INSTRUCTIONS ON HOW TO COMPLETE THE SURVEY FORM

The survey form has 32 sub-sections to complete. The sub-sections are grouped according to the main topics of the assessment mentioned on the previous page.

The first section is about you, and we request that everyone completes this section so that we can keep you informed about the outcomes of the survey. The remaining sections cover the specific topics listed below.

We recommend that you review the entire survey and then go back and complete the sections that you are knowledgeable about. If you have any data or reports which provide additional evidence to support your responses please submit these by email.

If there are sections that you are unable to complete, we kindly request that you provide the names and contact details for those people that could provide the requested information in the relevant section, so that we can follow up with them.

If you are a manager of a biodiversity related project, you are strongly encouraged to complete Section 32, which relates specifically to the impacts of COVID-19 on project delivery.

If there are other people that you think should be invited to complete the survey then please provide their names and contact details on the final page. The final page also has some additional space to add any final comments about the impact of COVID-19 on SIDS and their biodiversity and mitigation actions.

When you have finished the survey please remember to click on SUBMIT!

To help guide you through the survey, the table of contents is provided below:

1. About you
2. Environmental Impacts - general
3. Socio-economic Impacts - GDP
4. Socio-economic Impacts - Poverty
5. Socio-economic Impacts - Sectoral
6. Socio-economic Impacts - Tourism
7. Socio-economic Impacts - Marine Fisheries
8. Socio-economic Impacts - Aquaculture
9. Socio-economic Impacts - Trade
10. Socio-economic Impacts - Culture
11. Socio-economic Impacts - Gender
12. Economy and Biodiversity

Impacts on progress towards the 2030 Agenda for Sustainable Development

13. SDG Target 14.1 [pollution]
14. SDG Target 14.5 [protected area coverage and operational management]
15. SDG Target 14.7 [including sustainable fisheries, aquaculture and tourism management]
16. SDG Target 14.a [science and technology transfer]
17. SDG Target 14.c [legal framework]

Impact on progress towards the Aichi Biodiversity Targets

18. Aichi Biodiversity Target 3 [subsidies and incentives]
19. Aichi Biodiversity Target 10 [anthropogenic impacts on coral reefs and other vulnerable ecosystems]
20. Aichi Biodiversity Target 17 [NBSAP]
21. Aichi Biodiversity Target 18 [traditional knowledge]

Impact on the priority areas identified in the SAMOA Pathway

22. Priority Area 1 [sustainable economic growth]
23. Priority Area 2 [climate change]

24. Priority Area 3 [biodiversity, invasive species etc]
25. Priority Area 4 [human health, nutrition , diseases etc]
26. Priority Area 5 [partnerships]
27. Impact on participation in the annual meetings for SIDS
28. Impact on participation in the development of the Post-2020 Global Biodiversity Framework
29. Impact on participation in the negotiations of Biodiversity in Areas Beyond National Jurisdiction (BBNJ)
30. Major actions required for the effective implementation of the post-2020 Global Biodiversity Framework, Agenda 2030 (SDGs) and other relevant Multilateral Environmental Agreements (MEAs)
31. Mitigation actions to enhance resilience following the shocks precipitated by the COVID-19 pandemic
32. Impact of the COVID-19 pandemic on the implementation of biodiversity related projects.
33. Finish and Submit

ABOUT YOU
Please enter your name, affiliation, and contact details below
1. Family Name
2. First Name
3. Email
4. Organisation
5. Job title
6. Country
ENVIRONMENTAL IMPACTS
7. What is the overall impact of the COVID-19 pandemic on the environment, including biodiversity, in your country?
positive impact
negative impact
both positive and negative impacts
no impact
not sure
8. Please briefly describe any negative impacts of the pandemic on the environment.
9. What actions could be taken to mitigate for any negative impacts of the COVID-19 pandemic on the environment / biodiversity?
10. Please briefly describe any positive impacts of the pandemic on the environment / biodiversity.
11. What actions could be taken to sustain any positive outcomes of the COVID-19 pandemic on the environment / biodiversity?

SOCIO-ECONOMIC IMPACTS					
GDP					
12. What impact has the COVID-19 pandemic had on the following?					
	positive impact	negative impact	both positive and negative impacts	no impact	not sure
GDP					
Poverty					
Tourism					
Fisheries (marine)					
Aquaculture (marine)					
Trade (imports)					
Trade (exports)					
13. Please briefly describe the impact of the pandemic on GDP.					
14. What actions could be taken to mitigate for any negative impacts of the pandemic on GDP?					
15. What actions could be taken to sustain any positive outcomes of the pandemic on GDP?					
SOCIO-ECONOMIC IMPACTS					
Poverty in terms of health (nutrition), standard of living (sanitation, drinking water and housing), livelihoods etc.					
16. Please briefly describe what impact the pandemic had on poverty in your country?					
17. What actions could be taken to mitigate for any negative impacts of the pandemic on poverty?					
18. What actions could be taken to sustain any positive outcomes of the pandemic on poverty?					
SOCIO-ECONOMIC IMPACTS					
Sector specific impacts (tourism, marine fisheries and aquaculture)					
19. Before the COVID-19 pandemic, the contribution of the following sectors to GDP was:					
	increasing	decreasing	stable	not sure	
Tourism					
Marine capture fisheries					
Aquaculture (marine)					
20. Since the COVID-19 pandemic, the contribution of the following sectors to GDP has:					
	increasing	decreasing	stable	not sure	
Tourism					
Marine capture fisheries					
Aquaculture (marine)					
21. Please provide percentage contribution of tourism to GDP pre-COVID (2019) and post-COVID (2020).					

22. Please provide number of international arrivals pre-COVID (2019) and post-COVID (2020).
23. Please provide percentage contribution of marine fisheries to GDP pre-COVID (2019) and post-COVID (2020).
24. Please provide percentage contribution of aquauculture to GDP pre-COVID (2019) and post-COVID (2020).
SOCIO-ECONOMIC IMPACTS
Tourism Sector
25. Please briefly describe the impact of the pandemic on the tourism sector. (If you have data or reports to support your response, please send by email).
26. What actions could be taken to mitigate for any negative impacts of the pandemic on the tourism sector?
27. What actions could be taken to sustain any positive outcomes of the pandemic on the tourism sector?
SOCIO-ECONOMIC IMPACTS
Marine Capture Fisheries
28. Please briefly describe the impact of the pandemic on the marine capture fisheries sector. (If you have data or reports to support your response, please send by email).
29. What actions could be taken to mitigate for any negative impacts of the pandemic on the marine fisheries sector?
30. What actions could be taken to sustain any positive outcomes of the pandemic on the marine fisheries sector?
SOCIO-ECONOMIC IMPACTS
Aquaculture
31. Please briefly describe the impact of the pandemic on the aquaculture sector. (If you have data or reports to support your response, please send by email).
32. What actions could be taken to mitigate for any negative impacts of the pandemic on the aquaculture sector?
33. What actions could be taken to sustain any positive outcomes of the pandemic on the aquaculture sector?
SOCIO-ECONOMIC IMPACTS
Trade
34. Please briefly describe the impact of the pandemic on trade (imports / exports).
35. What actions could be taken to mitigate for any negative impacts of the pandemic on trade (imports / exports)?

36. What actions could be taken to sustain any positive outcomes of the pandemic on trade (imports / exports)?

SOCIO-ECONOMIC IMPACTS

Culture

37. What type of impact has the COVID-19 pandemic had on local culture in terms of the following?

	positive impact	negative impact	both positive and negative impacts	no impact	not sure
Values					
Religion					
Materials					
Language					
Education					
Other					

38. Please briefly describe any impacts of the COVID-19 pandemic on culture.

39. What actions could be taken to mitigate for any negative impacts of the pandemic on culture?

40. What actions could be taken to sustain any positive outcomes of the pandemic on culture?

SOCIO-ECONOMIC IMPACTS

Gender

41. Has the COVID-19 pandemic had gender specific or gender related impacts?

	positive impact	negative impact	both positive and negative impacts	no impact	not sure
Gender - Male					
Gender - Female					
Gender - Other					
Inclusion					
Equality					
Access to benefits					

42. Please describe any gender specific or gender related impacts of the COVID-19 pandemic (e.g. inclusion, equality, access to benefits)

43. What actions could be taken to mitigate gender specific or gender related negative impacts of the pandemic?

44. What actions could be taken to help sustain any gender specific or gender related positive outcomes of the pandemic?

ECONOMY AND BIODIVERSITY

45. Have decisions been made during the pandemic which could potentially have negative impacts on the environment and/or biodiversity?

	Yes	No	Not sure
Tourism (including ecotourism)			
Fisheries (marine)			
Aquaculture (marine)			
Trade (imports and exports)			
Poverty (health, education, standard of living)			
Gender			

46. Please explain the decisions taken during the pandemic that could pose the greatest threat to the environment / biodiversity.

IMPACTS ON PROGRESS TOWARDS THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

We would like to understand the impact of the COVID-19 pandemic on progress towards SDG14 in your country, and more specifically progress towards the following five Targets 14.1, 14.5, 14.7, 14.a and 14.c.

This section focuses on Target 14.1 (and the related Aichi Biodiversity Target 8).

TARGET 14.1 "By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution".

47. Were any measures put in place to address Target 14.1 before the COVID-19 pandemic? If yes, please explain.

48. What impact has the COVID-19 pandemic had on national progress towards Target 14.1?

49. Please describe how the COVID-19 pandemic has impacted progress towards Target 14.1.

50. Has the COVID-19 pandemic resulted in a change in the type and/or quantity of pollution entering the coastal and marine environment in your country?

	Yes	No	Not sure
Type of pollution			
Quantity of pollution			

51. Please describe the changes in the type and/or quantity of pollution entering the marine and coastal environment as a result of the pandemic in your country.

52. Were any measures put in place to address Target 14.1 as a result of the COVID-19 pandemic? If yes, please explain.

53. What action, if any, is needed to address Target 14.1 now?

IMPACTS ON PROGRESS TOWARDS THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

We would like to understand the impact of the COVID-19 pandemic on progress towards SDG14 in your country, and more specifically progress towards the following five Targets 14.1, 14.5, 14.7, 14.a and 14.c. This section focuses on Target 14.5 protected area coverage (and the related Aichi Biodiversity Target 11). Target 14.5: "By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information".
54. Were any measures in place to address Target 14.5 before the COVID-19 pandemic? If so, please explain.
55. What impact has the COVID-19 pandemic had on progress towards achieving Target 14.5?
56. Please describe how the COVID-19 pandemic has impacted progress towards Target 14.5.
57. Has the COVID-19 pandemic delayed or otherwise affected the designation of new or expansion of existing protected areas?
Yes
No
Unsure
58. Were any measures put in place to address Target 14.5 as a result of the COVID-19 pandemic? If so, please explain.
59. What action, if any, is needed to address Target 14.5 now?
60. Has the COVID-19 pandemic impacted the operational management of existing MPAs, LMMA or OECMs?
Yes
No
Unsure
61. Please explain how the COVID-19 pandemic has impacted the operational management of MPAs, LMMAs or OECMs?
62. Were any measures put in place to support the operational management of MPAs, LMMA or OECMs due to COVID-19 pandemic? If so, please explain.
63. What action, if any, is needed now to support the operational management of MPAs, LMMAs or OECMs?
IMPACTS ON PROGRESS TOWARDS THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT
We would like to understand the impact of the COVID-19 pandemic on progress towards SDG14 in your country, and more specifically progress towards the following five Targets 14.1, 14.5, 14.7, 14.a and 14.c. This section focuses on Target 14.7 and the economic benefits from the sustainable use of marine resources (and the related Aichi Biodiversity Target 6).

TARGET 14.7 "By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism".

64. What impact has the COVID-19 pandemic had on national progress towards achieving Target 14.7?

	positive impact	negative impact	both positive and negative impacts	no impact	not sure
Sustainable fisheries management					
Sustainable aquaculture management					
Sustainable tourism management					

65. Before the COVID-19 pandemic, what measures were in place to address sustainable fisheries management?

66. Please explain how the COVID-19 pandemic has impacted sustainable fisheries management. (If you have data or reports to support your response, please send by email).

67. Were any new measures put in place to address sustainable fisheries management as a result of the COVID-19 pandemic? If yes, please explain.

68. What action, if any, is needed to address sustainable fisheries management now?

69. Before the COVID-19 pandemic, what measures were in place to address sustainable aquaculture management? (If you have data or reports to support your response, please send by email).

70. Please explain how the COVID-19 pandemic has impacted sustainable aquaculture management.

71. Were any new measures put in place to address aquaculture management as a result of the COVID-19 pandemic? If yes, please explain.

72. What action, if any, is needed to address aquaculture management now?

73. Before the COVID-19 pandemic, what measures were in place to address sustainable tourism management?

74. Please explain how the COVID-19 pandemic has impacted sustainable tourism management. (If you have data or reports to support your response, please send by email).

75. Were any new measures put in place to address sustainable tourism management as a result of the COVID-19 pandemic? If yes, please explain.
76. What action, if any, is needed to address sustainable tourism management now?
IMPACTS ON PROGRESS TOWARDS THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT
We would like to understand the impact of the COVID-19 pandemic on progress towards SDG14 in your country, and more specifically progress towards the following five Targets 14.1, 14.5, 14.7, 14.a and 14.c. This section focuses on Target 14.a (and Aichi Biodiversity Target 19). TARGET 14.a "Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular Small Island Developing States and least developed countries"
77. Before the COVID-19 pandemic, what measures were in place to address Target 14.a?
78. What impact has the COVID-19 pandemic had on national progress towards achieving Target 14.a?
79. Please explain how the COVID-19 pandemic has impacted marine science and/or research in your country.
80. Were any new measures introduced to address Target 14.a as a result of the COVID-19 pandemic? If yes, please explain.
81. What action, if any, is needed to address Target 14.a now?
IMPACTS ON PROGRESS TOWARDS THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT
We would like to understand the impact of the COVID-19 pandemic on progress towards SDG14 in your country, and more specifically progress towards the following five Targets 14.1, 14.5, 14.7, 14.a and 14.c. This section focuses on Target 14c. TARGET 14c "Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want"
82. Before the COVID-19 pandemic, what measures were in place to address Target 14.c?
83. What impact has the COVID-19 pandemic had on progress towards achieving Target 14.c in your country?

84. Please explain how the COVID-19 pandemic has impacted progress towards Target 14.c
85. Were any new measures introduced to address Target 14.c as a result of the COVID-19 pandemic? If yes, please explain.
86. What action, if any, is needed to address Target 14.c now?
IMPACT ON PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS
The focus of the following sections is on the impact of the COVID-19 pandemic on national progress towards achieving the CBD Strategic Plan for Biodiversity 2011-2020 Aichi Biodiversity Targets. The questions in this section relate to Aichi Biodiversity Targets 3, 10, 17 and 18 as other relevant targets, notably 6, 8, 11 and 19, are mostly addressed under the previous section related to SDG14. This section focuses on Aichi Biodiversity Target 3. Aichi Biodiversity Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
87. Before the COVID-19 pandemic, what measures, if any, were in place to address Aichi Biodiversity Target 3?
88. What impact has the COVID-19 pandemic had on national progress towards Aichi Biodiversity Target 3?
89. Please describe the impact of the pandemic on national progress towards Aichi Biodiversity Target 3.
90. Were any new measures introduced to address Aichi Biodiversity Target 3 as a result of the COVID-19 pandemic? If yes, please explain.
91. What action, if any, is required to achieve Aichi Biodiversity Target 3 now?
IMPACT ON PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS
The focus of the following sections is on the impact of the COVID-19 pandemic on national progress towards achieving the CBD Strategic Plan for Biodiversity 2011-2020 Aichi Biodiversity Targets. The questions in this section relate to Aichi Biodiversity Targets 3, 10, 17 and 18 as other relevant targets, notably 6, 8, 11 and 19, are addressed under the previous section related to SDG14. This section focuses on Aichi Biodiversity Target 10. Aichi Biodiversity Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
92. Before the COVID-19 pandemic, what measures, if any, were in place to address Aichi Biodiversity Target 10?
93. What impact has the COVID-19 pandemic had on national progress towards Aichi Biodiversity Target 10?

94. Please describe the impact of the pandemic on national progress towards Aichi Biodiversity Target 10.
95. Were any new measures introduced to address Aichi Biodiversity Target 10 as a result of the COVID-19 pandemic? If yes, please explain.
96. What action, if any, is required to achieve Aichi Biodiversity Target 10 now?
IMPACT ON PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS
The focus of the following sections is on the impact of the COVID-19 pandemic on national progress towards achieving the CBD Strategic Plan for Biodiversity 2011-2020 Aichi Biodiversity Targets. The questions in this section relate to Aichi Biodiversity Targets 3, 10, 17 and 18 as other relevant targets, notably 6, 8, 11 and 19, are addressed under the previous section related to SDG14. This section focuses on Aichi Biodiversity Target 17. Aichi Biodiversity Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
97. Before the COVID-19 pandemic, what measures, if any, were in place to address Aichi Biodiversity Target 17?
98. What impact has the COVID-19 pandemic had on progress towards of Aichi Biodiversity Target 17?
99. Please describe the impact of the pandemic on progress towards Aichi Biodiversity Target 17.
100. Were any new measures introduced to address Aichi Biodiversity Target 17 as a result of the COVID-19 pandemic? If yes, please explain.
101. What action, if any, is required to achieve Aichi Biodiversity Target 17 now?
IMPACT ON PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS
The focus of the following sections is on the impact of the COVID-19 pandemic on national progress towards achieving the CBD Strategic Plan for Biodiversity 2011-2020 Aichi Biodiversity Targets. The questions in this section relate to Aichi Biodiversity Targets 3, 10, 17 and 18 as other relevant targets, notably 6, 8, 11 and 19, are addressed under the previous section related to SDG14. This section focuses on Aichi Biodiversity Target 18. Aichi Biodiversity Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
102. Before the COVID-19 pandemic, what measures, if any, were in place to address Aichi Biodiversity Target 18?

103. What impact has the COVID-19 pandemic had on national progress towards of Aichi Biodiversity Target 18?
104. Please describe the impact of the pandemic on progress towards Aichi Biodiversity Target 18.
105. Were any new measures introduced to address Aichi Target 18 as a result of the COVID-19 pandemic? If yes, please explain.
106. What action, if any, is required to achieve Aichi Biodivesity Target 18 now?
IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY
The SIDS Accelerated Modalities of Action (SAMOA) Pathway addresses priority areas for SIDS and calls for urgent action and support for SIDS; efforts to achieve their sustainable development. The SAMOA Pathway has five priority areas which include: 1. Promote sustained and sustainable, inclusive and equitable economic growth with decent work for all, sustainable consumption and production and sustainable transportation. 2. Act to mitigate climate change and adapt to its impacts by implementing sustainable energy and disaster risk reduction programs. 3. Protect the biodiversity of SIDS and care for environmental health by mitigating the impact of invasive plant and animal species and by properly managing chemicals and water, including hazardous waste, as well as protecting oceans and seas. 4. Improve human health and social development through food security and nutrition, improved water and sanitation, reducing the incidence of non-communicable disease and by promoting gender equity and women's empowerment. 5. Foster partnership among SIDS, UN Agencies, development partners and others to achieve these goals.
107. Before the COVID-19 pandemic, were specific measures in place to promote/ support any of the priority areas?

	Yes	No	Not sure
Sustainable economic growth			
Climate change adaptation and mitigation			
Biodiversity protection			
Improved human health and social development			
Partnerships among SIDS			

108. If you answered yes, please specify the measures for each priority area.
109. Indicate the priority areas if the measures are priority area specific
110. What impact has the COVID-19 pandemic had on the implementation of the priority area measures?

	positive impact	negative impact	both positive and	no impact	not sure

			negative impacts		
Priority area 1 measures					
Priority area 2 measures					
Priority area 3 measures					
Priority area 4 measures					
Priority area 5 measures					

IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY

Priority Area 1

Promote sustained and sustainable, inclusive and equitable economic growth with decent work for all, sustainable consumption and production and sustainable transportation.

111. Please briefly describe the impact of the pandemic on Priority Area 1 measures.

112. Were any new measures introduced to address Priority Area 1 as a result of the COVID-19 pandemic? If yes, please explain.

113. What actions, if any, would be required to address Priority Area 1 now?

IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY

Priority Area 2

Act to mitigate climate change and adapt to its impacts by implementing sustainable energy and disaster risk reduction programs.

114. Please briefly describe the impact of the pandemic on Priority Area 2 measures.

115. Were any new measures introduced to address Priority Area 2 as a result of the COVID-19 pandemic? If yes, please explain.

116. What actions, if any, would be required to address Priority Area 2 now?

IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY

Priority Area 3

Protect the biodiversity of SIDS and care for environmental health by mitigating the impact of invasive plant and animal species and by properly managing chemicals and water, including hazardous waste, as well as protecting oceans and seas.
117. Please briefly describe the impact of the pandemic on Priority Area 3 measures.
118. Were any new measures introduced to address Priority Area 3 as a result of the COVID-19 pandemic? If yes, please explain.
119. What actions, if any, would be required to address Priority Area 3 now?
IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY
Priority Area 4 Improve human health and social development through food security and nutrition, improved water and sanitation, reducing the incidence of non-communicable disease and by promoting gender equity and women's empowerment.
120. Please briefly describe the impact of the pandemic on Priority Area 4 measures.
121. Were any new measures introduced to address Priority Area 4 as a result of the COVID-19 pandemic? If yes, please explain.
122. What actions, if any, would be required to address Priority Area 4 now?
IMPACT ON THE PRIORITY AREAS IDENTIFIED IN THE SAMOA PATHWAY
Priority Area 5 Foster partnership among SIDS, UN Agencies, development partners and others to achieve these goals.
123. Please briefly describe the impact of the pandemic on Priority Area 5 measures.
124. Were any new measures introduced to address Priority Area 5 as a result of the COVID-19 pandemic? If yes, please explain.
125. What actions, if any, would be required to address Priority Area 5 now?
IMPACT ON THE ANNUAL MEETINGS FOR SIDS
126. What impact has the COVID-19 pandemic had on participation in the intended annual meetings for SIDS National Focal Points (NFPs)?

	positive impact	negative impact	both positive and negative impacts	no impact	not sure
Participation in intended annual meetings for SIDS NFPS					

127. Please describe the impact of the pandemic on the intended annual meetings for SIDS NFPs.
128. What actions would mitigate any negative impacts of the pandemic on the convening of annual meetings for SIDS NFPs.
IMPACT ON PARTICIPATION IN THE DEVELOPMENT OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK
129. Please indicate national participation in any of the opportunities for input into the development of the post-2020 global biodiversity framework listed below:

	Yes	No	Not sure
Participation in global, regional and thematic consultations during 2019-2020			
Participation in the meetings of the Open-Ended Intersessional Working Group (OEWG) on the preparation of the Post-2020 global biodiversity framework			
Participation in meetings of the CBD subsidiary bodies (Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), Subsidiary Body on Implementation (SBI) and the Ad-hoc Open-ended Working Group on Article 8(j) and Related Provisions) and expert meetings.			
Submission of views and/or substantive input/comments to the discussion documents on the post-2020 framework, as they are made available for consultation in the CBD post-2020 website.			
Convening of meetings/consultations, by interested Governments, organizations and stakeholders, on the post-2020 biodiversity framework and use the results of these discussions as a basis to inform their input to the formal process.			
Provision of human resources, technical and/or financial support, by interested Governments, organizations and stakeholders, for any part of the preparatory process.			
Shared experiences and best practices as well as making pledges under the framework of Sharm El-Sheikh to Kunming Action Agenda for Nature and People.			
Intended participation in CBD COP-15, to be held in Kunming, China, in 2021.			
Participation in global, regional and thematic consultations during 2019-2020			
Participation in the meetings of the Open-Ended Intersessional Working Group (OEWG) on the preparation of the Post-2020 global biodiversity framework			

Participation in meetings of the CBD subsidiary bodies (Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), Subsidiary Body on Implementation (SBI) and the Ad-hoc Open-ended Working Group on Article 8(j) and Related Provisions) and expert meetings.			
Submission of views and/or substantive input/comments to the discussion documents on the post-2020 framework, as they are made available for consultation in the CBD post-2020 website.			
Convening of meetings/consultations, by interested Governments, organizations and stakeholders, on the post-2020 biodiversity framework and use the results of these discussions as a basis to inform their input to the formal process.			
Provision of human resources, technical and/or financial support, by interested Governments, organizations and stakeholders, for any part of the preparatory process.			
Shared experiences and best practices as well as making pledges under the framework of Sharm El-Sheikh to Kunming Action Agenda for Nature and People.			
Intended participation in CBD COP-15, to be held in Kunming, China, in 2021.			

130. Has the pandemic constrained participation in the identified opportunities for development of the post-2020 global biodiversity framework?

	Yes	No	Unsure
Participation in the identified opportunities for development of the post-2020 global biodiversity framework			

131. If yes, please briefly describe the specific challenges.

132. What action would enable greater participation in the development of the post-2020 global biodiversity framework?

133. What support would be required (and from whom)?

IMPACT ON PARTICIPATION IN THE NEGOTIATIONS OF BIODIVERSITY IN AREAS BEYOND NATIONAL JURISDICTION (BBNJ)

134. An international legally binding agreement under the United Nations Convention on the Law of the Sea (UNCLOS) of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

135. Indicate national participation in any of the listed opportunities outlined in the programme of intersessional work for negotiations of the BBNJ

	Yes	No	Not sure
1) Introduction (14/09/2020)			
2) EIA (16-23 Sep 2020)			
3) EIA (28 Sept to 02 Oct 2020)			

4) MGR (12-16 Oct 2020)			
5) MGR (21-27 Oct 2020)			
6) Bilateral consultations (2 Oct-6 Nov 2020)			
7) ABMT (11-17 Nov 2020)			
8) ABMT (24 Nov-03 Dec 2020)			
9) CB/TOMT (13-19 Jan 2021 and 26 Jan -2 Feb 2021)			
10) CB/TOMT (26 Jan -2 Feb 2021)			
11) Cross-cutting (19 Mar 2021)			

136. Has COVID-19 posed any challenges regarding participation in the programme of intersessional work?
Yes
No
Not sure
137. If yes, identify the specific challenges.
138. What major actions would be required to participate (further) in the negotiations of Biodiversity in Areas Beyond National Jurisdiction?
139. What support would be required (and from whom)?
MAJOR ACTIONS REQUIRED FOR THE EFFECTIVE IMPLEMENTATION OF THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK, AGENDA 2030 (SDGS) AND OTHER RELEVANT MULTILATERAL ENVIRONMENTAL AGREEMENTS (MEAS)
140. What actions will be required by SIDS to support the effective implementation of the post-2020 Global Biodiversity Framework, Agenda 2030 for ocean related SDGs and other relevant MEAs?
141. What support would be required to achieve the identified actions (and from whom)?
142. Have there been any actions taken to respond to the economic impacts of COVID-19 that may impact the implementation of the post-2020 Global Biodiversity Framework, Agenda 2030 (SDGs) and other relevant MEAs?
Yes
No
Not sure
143. If yes, please explain.

MITIGATION ACTIONS TO ENHANCE RESILIENCE FOLLOWING THE SHOCKS PRECIPITATED BY THE COVID-19 PANDEMIC			
144. What mitigation actions would be required to enhance the resilience of SIDS, following the shocks precipitated by the COVID-19 pandemic?			
145. What support would be required to achieve the identified mitigations actions (and from whom)?			
146. Have there been any mitigation actions taken (knee jerk reactions) to respond to the economic impacts of COVID-19 that may further negatively impact biodiversity?			
Yes			
No			
Not sure			
147. If yes, please explain.			
IMPACT OF THE COVID-19 PANDEMIC ON THE IMPLEMENTATION OF BIODIVERSITY RELATED PROJECTS.			
The assessment aims to document the impacts of the COVID-19 related disruptions on the implementation of biodiversity related projects. This section can be completed by anyone that has been managing a marine or coastal biodiversity related project during the pandemic. This includes all the national project managers responsible for demonstration projects on SIDS that are being supported in the WIO region by the GEF funded project on 'Implementation of the Strategic Action Programme for the protection of the Western Indian Ocean from landbased sources and activities' (WIOSAP).			
148. Country			
149. Donor			
150. Project Title			
151. What impact has the pandemic had on your project?			
positive impact			
negative impact			
both positive and negative impact			
no impact			
not sure			
152. Has the pandemic affected any of the following elements of your project?			
	Yes	No	Unsure
Administrative procedures			
Financial procedures			
Recruitment procedures			

Procurement procedures			
Receipt of training			
Delivery of training			
Field work (i.e. mobilisation of field teams)			
Stakeholder engagement / consultation			
Reporting procedures			
Workshops			
Conferences			
International travel (project associated)			
Other			
153. Please briefly explain exactly how the pandemic has affected the implementation of the project you have been managing			
154. What was the most significant challenge to the successful and timely delivery of your project during the COVID-19 pandemic?			
155. What action could have been taken to minimize the challenges you have experienced in implementing the project as a result of the pandemic?			
156. What action could be taken now to help ensure the successful delivery of the project?			
157. 158. Please use this space to provide us with the contact names and email addresses of other people in your country that you think should be invited to complete the online survey about the impact of COVID-19 on SIDS			
158. 159. Please use this space to add any final comments about COVID-19 pandemic impacts and challenges and opportunities for SIDs in the Western Indian Ocean (WIO)			