

To: Seychelles MSP Initiative
From: MSP Technical Team
Date: 23 July 2014
Version: 1.1

1. Introduction and context

Upon completion, the 'Master List of Uses and Activities' is intended to be a comprehensive list of uses and activities and their associated descriptions for the Seychelles Exclusive Economic Zone. These description will apply to all marine planning outputs for the Seychelles Marine Spatial Planning Initiative including objectives, recommendations, zoning, and marine planning tools (e.g., compatibility matrix, recommended uses and activities tables). The list was developed from discussions with the Government of Seychelles, Seychelles Fishing Authority, Seychelles MSP Technical Working Group, the Steering Committee, stakeholder engagement, MSP Technical Team, advisors to the process and others, from July 2014 to present. When this list is complete, it will contain the marine uses and activities that presently occur in the Seychelles EEZ as well as those with the potential to occur in the foreseeable future (10-20 years). The descriptions are not intended to define thresholds and/or acceptable intensity of use because these vary from place to place and will be determined by management prescriptions. **The purpose of this document is to ascertain the correct names and descriptions for the marine uses and activities in the Seychelles that is agreed upon by the relevant agency or sector.**

2. DRAFT Master List of Uses

This is a draft list, with descriptions from several sources. If no source is listed, descriptions are general based on this activity worldwide and it is noted in highlighted yellow where a description is still needed.

Category	Use or Activity	Description - DRAFT
Aquaculture	Nearshore: marine plants, shellfish, other invertebrates	Marine-based aquaculture. Activities currently are located outside Mahe on Coetivy and Praslin Islands. The Prawn Farm on Coetivy is 300 km from Mahe and raises giant black prawns in the ocean, exporting more than 835 tonnes of frozen prawns. The Pearl Oyster Farm on Praslin is in the National Park, between Praslin and Curieuse. It collects juvenile oysters from the wild to produce adult oysters. The Giant Clam Farm is under the same management as the Pearl Oyster Farm and raises clams on land near the Praslin airport. (source: Seychelles.org)

Category	Use or Activity	Description - DRAFT
	Nearshore: finfish	Marine-based aquaculture for finfish. No present activities in the Seychelles.
	Offshore: finfish	{need a definition} will it realistically occur in the future?
Biodiversity	Marine Protected Area (MPA)	A clearly defined geographic space that is recognised, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature (source: IUCN)
Biotechnology	Biomedical technology	{need a definition}
Culture	Cultural heritage	{need a definition}; if different than Seychelles culture
	Seychelles culture	{need a definition}
Education	Education	{need a definition}
Energy	Renewable Energy	Energy generation from wave, wind, tidal and/or other renewable marine sources. Includes facilities and infrastructure such as generation structures fixed or anchored to the seabed or foreshore, accommodation, and industrial facilities such as maintenance buildings. Does not include transmission or distribution lines on land or in the sea, which are included under the definition of linear utilities. Renewable energy projects in the Seychelles are helping the island nation decrease power outages, address long-term energy security, and reduce its carbon footprint. (source: Masdar 2013). Renewable energy is currently located near the coast and there is a 8-turbine wind farm on two islands off the coast of Mahe.
	Non-renewable Energy	{need a definition} Petroleum exploration and oil and gas licensed concessions.
Fishing	Artisanal	Fisheries that target fish on the sea floor (demersal), semi-pelagic species and numerous invertebrates at different times of the year. These fisheries use small, motorised boats. Artisanal fisheries employ about 1,700 individuals and account for 4% of the Seychelles workforce (2005). These fisheries include a variety of gear and vessel types: handline, trap, harpoon, net for a number of species (lobster, mackerel, octopus, shark, demersal fish, semi-demersal fish. The fishery is small in terms of overall employment and wealth generation yet plays a vital role in meeting daily protein requirements for Seychellois (source: Seychelles.org; Clifton et al 2012).
	Handline (and dropline)	An artisanal fishery undertaken predominately using whalers (decked boats with inboard engines) and schooners (larger, with sleeping quarters). Concentrated in waters within 20km of the main islands, and up to 100 km from shore. Highest activity is during southeast trade winds (June-Sept). Dominant species targeted include pelagic species like snapper (Lutjanidae) and grouper (Serranidae). Demersal species include trevally (Carangidae) and wahoo (Scombridae).

Category	Use or Activity	Description - DRAFT
	Fishing (general)	There are five types of fishing in the Seychelles: artisanal, semi-industrial, and industrial, recreation and sport fishing. It is prohibited to use spear guns and demersal trawling in Seychelles waters. It is prohibited to export live fish and mother ship ventures with dories are prohibited on the Amirantes and Mahe plateaus. Fishing with nets is prohibited in certain areas of the reefs on all three main granitic islands. Fishing is prohibited in the Marine Parks around the granitic islands. Most fish is consumed fresh. High quality species are sold to export and fish processing companies for hotels or export on ice to Europe. Some fish are smoked (sailfish and marlin). Ninety-two percent of the Seychelles domestic export of fish go to France, Japan, Germany, Mauritius, Reunion and the United Kingdom (source: seychelles.org)
	Industrial	An industrial fishery that is operated by licensed foreign-owned vessels; there are a few Seychelles registered vessels in this fishery. There are two main types of industrial fishing in the Seychelles: purse seine and longline. See tuna fisheries. There are restricted zones for foreign fishing vessels that prohibit fishing within three kilometres from the 200 metre isobath (source: Clifton et al. 2012, seychelles.org)
	Lobster	An artisanal fishery for lobster species (<i>Panulirus penicillatus</i> , <i>P. longipes</i> , <i>P. versicolor</i> , and <i>P. ornatus</i>). Open season from November to January (3 months), and serves the tourist market in hotels and restaurants; the season is closed from February to October. Annually, 30 licenses are granted, with up to three divers per license (source: Clifton et al. 2012).
	Octopus	An artisanal fishery for <i>Octopus vulgaris</i> done on foot and diving using harpoons. Part time subsistence fishery. Spear guns are prohibited (source: Clifton et al. 2012).
	Net (beach seine and gillnet)	An artisanal fishery using beach seine and gillnets. Mainly for mackerel (Scombridae) from the mini-Mahes. Mackerel gillnet fishing is restricted to daytime only; no fishing from 16:00 to 05:00 hrs. Mackerel is often used as bait in the handline fishery.
	Recreational	A non-commercial fishery that is active most often on the weekend and in the evening. The fishery uses hand lines and targets demersal species (snapper, lethrinids, groupers) and semi-demersal species (sphyraenids and carangids).
	Sea cucumber	An artisanal fishery that targets at least <i>Holothuria</i> species from mini-Mahés using SCUBA equipment. Hookah compressors are not currently used in the Seychelles. Regulated since 2001, the fishery is open for eight months from October - May. The sea cucumber fishery is a shared quota system for the four major species. (source

Category	Use or Activity	Description - DRAFT
	Semi-industrial	A semi-industrial fishery that is locally owned and uses small long-liners to target pelagic species such as swordfish, tuna, and occasionally sharks.
	Shark	An artisanal fishery that operates in nearshore waters from mini-Mahé, using longline gear and may involve semi-industrial longliners. The use of gillnets is prohibited (banned) for shark fishing and all vessels with an LOA > 24 m must not remove fins from the sharks. Target species are mainly tiger shark (<i>Galeocerdo cuvier</i>) and sandbar shark (<i>Carcharhinus plumbeus</i>)
	Sport	Sport fishing targets swordfish (Xiphiidae) and marlin (Istiophoridae) (source: Clifton et al. 2012). Most of the sport fishing is concentrated along the whole Mahe Plateau out to about 16 km (10 miles) from the drop off. Depending on the weather, seasons, currents, sea surface temperature, etc. fishing may occur in any direction during the year. Fishing occurs outside of the inner islands, for example Platte, Coetivy, and the African Banks area are popular and sport-fishing boats sometimes venture to the other Amirantes islands as well (source: Fishing in Seychelles 2014).
	Subsistence (outer islands)	{need a definition}
	Trap	An artisanal fishery that takes place in sheltered, inshore waters. The activity increases during southeast tradewinds and is often undertaken in conjunction with other fishing activities. Vessels are small, with outboard motors. Mesh size restrictions and construction regulations apply. Target species include reef-associated fish particularly rabbitfish (Siganidae) and parrotfish (Scarinae) (source: Clifton et al. 2012).
	Tuna: Longline industrial	An industrial fishery that uses longline gear and targets deep swimming tuna. Fishery operates licensed foreign-owned vessels from Taiwan and Japan. Managed by the SFA and IOTC.

Category	Use or Activity	Description - DRAFT
	Tuna: Purse seine industrial	An industrial fishery that targets yellowfin (<i>Thunnus albacores</i>) and big eye (<i>Thunnus obesus</i>) tuna. Caught by licensed foreign-owned companies from Spain and France, under an EU agreement. Purse seining is a type of dragnet that closes at the bottom, like purse strings, so that the fish cannot escape (sources: Clifton et al. 2012 and Seychelles.org). The purse seine fishery catch levels have been stable for the last 10 years, and include 300,000 tonnes from the southwest Indian, with 15% of this catch in the Seychelles EEZ (45,000 tonnes). Most of the tuna is transhipped to the Port of Victoria (85%) and sent in refrigerated vessels to Europe, Thailand, Puerto Rico and Mauritius. Managed by the SFA and IOTC.
Fishing Infrastructure	Landing site	{need a definition}
	Processing facility	Commercial facilities that process marine fish or invertebrates for example canning, smoking, and salting of fish catches.
Infrastructure	Commercial moorings	Large, permanent moorings for commercial vessels, typically associated with a commercial port. Used by commercial vessels or ships prior to entering a ports shoreside facilities.
	Dredging and at-sea disposal sites	{need a definition}
	Maritime security	Marine infrastructure for Seychelles government agencies responsible for maritime security and search and rescue.
	Ports, marinas, harbours	Facilities designed to attract and accommodate commercial vessels or ships, industrial vessels, community, public or private vessels and uses. Includes docks, wharves, piers, ramps, breakwaters, and related structures in harbours, marinas and ferry terminals, and associated marine services (e.g., ways, repairs, food services, pump-out sites, fuel). Structures may be affixed to the foreshore and seabed by pilings or floats, or involve foreshore fill. Includes commercial ports. Structures may be affixed to the foreshore and seabed by pilings or floats, or involve fill.
	Point source utilities	Outfalls and discharge points, including but not limited to those used for sewage, wastewater and stormwater for public, private, commercial and/or industrial purposes.
	Reclamation zones	{need a definition}
	Recreational anchorages and moorings	Anchoring sites and mooring buoys for recreational vessels. Includes temporary vessel anchoring at designated sites, mooring buoys. Does not include docks, wharves, piers, or related facilities in marinas and harbours.

Category	Use or Activity	Description - DRAFT
	Telecommunications	Underwater lines and structures including, but not limited to those used for flow, transit, distribution or broadcast of water, electricity and telecommunication services for public and/or private purposes. Generally on or under the seabed or anchored to the seabed but may also be suspended in the water column. Includes associated rights of way. Includes associated infrastructure and rights-of-way.
	Waste management	Waste water from industrial, commercial and residential sources.
Mining	Minerals and Aggregates mining	Marine operations associated with extracting minerals and aggregates (including sand and gravel) from foreshore, nearshore and offshore areas, as well as related facilities and infrastructure used during mining operations at-sea. Does not include wharves or docks attached to the shore (used for loading or transporting mined products from terrestrial mining operations) because these are included under the definition of docks
Recreation	Public recreation	Non-extractive self-guided uses and activities include birding, boating, jet skiing, kayak staging and landing areas, motor boating, sailing, scuba diving, snorkelling, stand up paddle boarding, surfing, swimming, temporary anchorage, water skiing, whale watching, wildlife viewing and windsurfing. Public recreation does not involve a paid service component.
Research	Scientific research	Activities designed to establish or expand knowledge of the marine environment and undertaken by educational institutions, research institutions, surveyors, research companies or consultants. Also includes citizen science, non-profit activities and locally based research and monitoring activities.
Tourism	Sustainable tourism	A commercial activity operated with respect to environmental sustainability. May include a paid service component such as crewed boats, guiding and interpretation, cultural tourism, nature-based adventure and ecotourism. Includes lodging, hotels, resorts, and eco-lodges. Tourism activities that focus on coastal environments generate 25% of GDP for Seychelles and employ 21% of the workforce (source: National Bureau of Statistics 2009).
	Tourism	{need a definition}
Transportation and Shipping	Ferries	{need a definition}
	Shipping lanes - international	{need a definition}
	Shipping lanes - petroleum	{need a definition}

3. Sources

Clifton, J., M. Etienne, D.K.A. Barnes, R.S.K. Barnes, D.J. Suggett and D.J. Smith. 2012. Marine conservation policy in Seychelles: current constraints and prospects for improvement. *Marine Policy*. 36: 823-831.

Fishing in Seychelles. 2014. Personal communication, Mr. Henry Riggs-Miller.

Masdar. 2013. Port Victoria Wind Power Project in Seychelles. <http://www.masdar.ae/en/media/detail/seychelles-wind-farm>. Accessed 18 July 2014.

National Bureau of Statistics. 2010. Seychelles in figures 2010. Victoria, National Bureau of Statistics. http://www.nsb.gov.sc/files/Reports/SIF_2009.pdf. Accessed 21 July 2014.

National Bureau of Statistics. 2013. Seychelles in figures 2013. Victoria, National Bureau of Statistics. http://www.nsb.gov.sc/wp-content/uploads/2014/03/Seychelles-In-Figures-2012_2013-Edition.pdf Accessed: 23 July 2014

Seychelles.org. 2013. The Fishing Industry. <http://www.seychelles.org/fishing-industry#axzz37yENifOQ>. Accessed 18 July 2014.

For more information about the Seychelles MSP Initiative, email
carolusiris@yahoo.co.uk

and visit the website

www.seychellesmarinespatialplanning.com