



Realising the potential of the Outermost Regions for sustainable blue growth

ANNEX 4 TO THE FINAL REPORT
THE BLUE ECONOMY IN FRENCH GUIANA

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in partnership with AND International, Fundación AZTI and
Poseidon Aquatic Resources Management Ltd**

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List of acronyms

ADEME	Agence de l'Environnement et de la Maîtrise de l'Énergie — Agency for the Environment and Energy Management
CAGR	Compound annual growth rate
CARICOM	Caribbean Community
CPER	Contrat de plan Etat-Région — State-Region contract plan
CRPMEM	Comité Régional des Pêches Maritimes et des Elevages Marins — Regional Committee of Marine Fisheries and Marine Farming
CTG	Collectivité Territoriale de Guyane — French Guiana Territorial Collectivity
CTG	Comité du Tourisme de Guyane — French Guiana Tourism Committee
DDM	Direction de la Mer — Direction of the Sea
DEAL	Direction de l'environnement, de l'Aménagement et du Logement — Directorate for Environment, Development and Housing
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESF	European Social Fund
GVA	Gross Value Added
IEDOM	Institut d'Émission des Départements d'Outre-mer — French overseas departments note-issuing bank
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer — French Research Institute for Exploitation of the Sea
INSEE	Institut National de la Statistique et des Etudes Economiques — National Institute of Statistics and Economic Studies
IUUF	Illegal, Unreported and Unregulated fishing
MSP	Marine Spatial Planning
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne — Statistical classification of economic activities in the European Community
POSEI	programme of options specific to the remote and insular nature of the outermost regions
SIH	Système d'Informations Halieutiques — Fisheries Information System
SRCAE	Schéma Régional du Climat, de l'Air et de l'Énergie — Regional climate-air-energy schemes

Mapping economic activities

1. Identification and mapping of economic activities

The following tables provide economic information on each maritime activity in the French Guiana.

Table 1 — GVA of marine and maritime activities

Group	Sectors	Mature (M) vs pre-develop.(P) activity	GVA (1.000 euros)							GVA CAGR
			2008	2009	2010	2011	2012	2013	2014	
Living resources	Fisheries and aquaculture	M	14 543	14 172	13 322	13 469	12 363	11 403	12 179	-5%
Non living resources	Extraction of oil and gas	P	na	na	na	na	na	na	na	na
Shipping	Maritime transport	M	162	227	1 894	2 504	2 925	2 644	na	75%
	Ports (including dredging)	M	7 225	6 923	7 271	7 480	7 440	8 998	na	4%
Tourism	Coastal tourism	M	na	na	na	na	70 920	na	na	na
	Cruise tourism	P	na	na	na	na	na	na	na	na
Marine renewable energy	Marine renewable energies	P	0	0	0	0	0	0	0	0

NA: not available.

Table 2 – Employment in marine and maritime activities

Group	Sectors	Mature (M) vs pre-develop.(P) activity	Employment							Employment CAGR
			2008	2009	2010	2011	2012	2013	2014	
Living resources	Fisheries and aquaculture	M	497	494	497	509	512	524	524	1%
Non living resources	Extraction of oil and gas	P	na	na	na	na	na	na	na	na
Shipping	Maritime transport	M	15	21	53	92	96	105	na	48%
	Ports (including dredging)	M	117	112	118	121	121	146	na	4%
Tourism	Coastal tourism	M	na	na	na	na	2 487	na	na	na
	Cruise tourism	P	na	na	na	na	na	na	na	na
Marine renewable energy	Marine renewable energies	P	0	0	0	0	0	0	0	0

NA: not available.

Table 3 – Turnover of marine and maritime activities

Group	Sectors	Mature (M) vs pre-develop.(P) activity	Turnover (1.000 euros)							Turnover CAGR
			2008	2009	2010	2011	2012	2013	2014	
Living resources	Fisheries and aquaculture	M	32 190	31 453	30 220	32 678	32 259	31 369	31 946	-1%
Non living resources	Extraction of oil and gas	P	na	na	na	na	na	na	na	na
Shipping	Maritime transport	M	600	840	5 511	7 556	8 684	8 076	na	68%
	Ports (including dredging)	M	17 268	16 483	17 272	17 916	17 754	21 269	na	4%
Tourism	Coastal tourism	M	na	na	na	na	197 000	na	na	na
	Cruise tourism	P	na	na	na	na	na	na	na	na
Marine renewable energy	Marine renewable energies	P	0	0	0	0	0	0	0	0

NA: not available

Sources and methods for the estimates of GVA, employment and turnover

Statistical information by NACE code for the French Guiana was only available for the number of employees (source: Institut Français de Recherche pour l'Exploitation de la Mer (INSEE)), no statistical information was available for gross value added (GVA) and turnover at this territorial level.

GVA and turnover have been estimated based on the EUROSTAT data and the employment statistics. The following ratios have been used: turnover/employee, GVA / employee and GVA / turnover for each NACE code in France. This method has been applied for maritime transport, ports and cruise tourism.

For fishery, aquaculture and coastal tourism, specific sectoral information has been used.

1.1 Fishery and aquaculture

1.1.1 Overview

Fishery

In 2014, the fishing fleet is composed of 198 vessels, among which 120 are active for fishing activity.

Among these 120 vessels:

- 102 are coastal vessels with length between 7 and 12 m. Most of them (96 vessels) use drift-nets. Other gears used are fixed gill-nets (24 vessels), traps (3) and hooks (2).
- 18 are involved in deep-sea fishery with length between 20 and 24m. They mainly target shrimp with trawlers.

Most of the vessels (83 %) use only one gear.

In addition to these 120 French vessels, 45 Venezuelan vessels are involved in red snapper fishery, they use lines.

The following table summarize the main features of these three segments.

Table 4 — Main features of the fishing fleet segment in French Guiana

	Coastal	Shrimp fishery	Red snapper
Number of active vessels	102	18	45 (about 20 vessels active each month)
Length of vessels	7-12 m	20-24 m	15-20 m
Number of people involved	266	90	Between 10-15 person / vessel
Gears	Drift nets mainly To a lesser extent: gill-nets, traps, hooks	Trawl	Lines
Main species targeted	Acoupa	Shrimp	Red snapper

Source: Système d'informations halieutiques (SIH) — Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)

The volume of catches is estimated at 3 791 tonnes in 2015 (5 258 tonnes if we take into account Venezuelan fleet). This covers informal catches by the national fleet. In addition, according to the interviewees, there are important illegal catches from Brazilian fleet in the Eastern part of the area. This is estimated at 4000 tonnes by local experts.

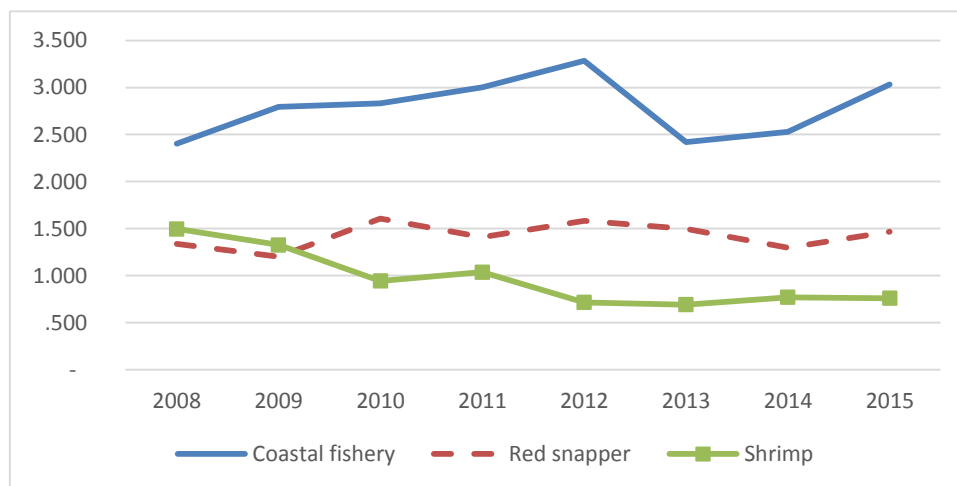
Table 5 — Volume landed in French Guiana in 2015

	Volume landed	% total
Coastal fishery	3 032	58 %
Shrimp	759	14 %
Total French fleet	3 791	72 %
Red snapper	1 467	28 %
Total	5 258	100 %

Source: IFREMER

The following figure presents the volume of catches between 2008 and 2015. Catches from coastal fleet range between 2 400 and 3 032 tonnes (lowest level in 2008 and 2013), red snapper catches range between 1 200 and 1 600 tonnes and shrimp catches met an important decrease over the period (-42 %) with 1 496 tonnes in 2008 and 759 tonnes in 2015.

Figure 1 — Volume landed by fleet segment between 2008 and 2015 (tonnes)



Source: IFREMER

In addition, an 'informal' supply chain of swim bladder is set up in French Guiana. This is a high value product purchased by Asian communities. The total sales for this product are estimated, by Agence Française de Développement, at €1.57 million in 2010 ⁽¹⁾.

In many vessels, the vessel owners are not embarked and the fishermen are employees. The French fleet is characterized by the large employment of sailors from third countries. In 2014, French nationality represents the third nationality for fishermen ⁽²⁾. The fisherman nationalities distribution is as follows:

- 47.3 % from Republic of Guiana
- 32.8 % from Brazil
- **14.9 % from France**
- 5 % from other countries (Suriname and Haïti mainly).

Furthermore, the level of education is particularly low for fishermen: 93.6 % of people involved in the fishery have no education level or just a primary school level ⁽³⁾.

Aquaculture

There is no aquaculture production in French Guiana. However, some projects have been identified:

- Oyster farming in Matoury area (West from Cayenne)
- Continental fish farming
 - Freshwater shrimp (*Macrobrachium rosenbergii*)
 - Atipa (*Hoplosternum littorale*)
 - Tambaqui (*Colossoma macropomum*)
 - barred catfish (*Pseudoplatystoma fasciatum*).

The professional organisation for aquaculture (Association Aquacole de Guyane) developed a strategy for the development of freshwater aquaculture in 2012. The

⁽¹⁾ Report from Agence Française de Développement
http://www.afd.fr/webdav/shared/PORTAILS/PAYS/GUYANE_2/Rapport%20AFD%20mission%20p%20C3%20AAche%20Guyane%20VF%20_externesiteinternet.pdf.

⁽²⁾ Tableau de bord sur les profils socioprofessionnels des marins de la filière pêche en Guyane 2009-2014, Observatoire Régional Emploi Formation (OREF).

⁽³⁾ Tableau de bord sur les profils socioprofessionnels des marins de la filière pêche en Guyane 2009-2014, Observatoire Régional Emploi Formation (OREF).

implementation of this strategy has been postponed because of the low access to finance and the lack of juveniles. However, a hatchery will be developed by the organisation in Soucoumou with the support of the 'Collectivité Territoriale de Guyane' and the production is planned for 2017.

Processing

There are five companies involved in sea product processing. The main companies are:

- ABCHEE
- COGUMER
- Cuisine SOLEIL
- DELIMER.

ABCHEE and COGUMER are the two biggest companies for processing (with about 50 employees each). They process all types of products landed in French Guiana (coastal fish, red snapper and shrimp). Coastal fish is also sold through the regional wholesale market ('Marché d'Intérêt Régional').

Processed products are marketed in French Guiana, in the Caribbean area and in Metropolitan France.

1.1.2 Geographical distribution

Fishery

The main ports for coastal vessels are:

- Cayenne area:
 - Cayenne (38 coastal vessels)
 - Rémire Montjoly (18 coastal vessels)
 - Le Larivot (18 deep-sea fishing vessels).
- Western area (close to Suriname):
 - Sinnamary (16 coastal vessels)
 - Iracoubo-Organabo (4 coastal vessels)
 - Awala Yalimapo (1 coastal vessels).
- Eastern area (close to Brazil): Saint-Georges (14 coastal vessels).
- Kourou (10 coastal vessels).

Aquaculture

Oyster farming project in Matoury production.

Fish farming and freshwater shrimp farming projects in inland area.

1.1.3 Main socio-economic trends

Fishery

The trends of the fishing sector are relatively stables in terms of

- number of vessels
- catches
- prices
- employment.

However, the sector shows constant weaknesses from technical, economic and social points of view: low wages and education, low diversification, underinvestment in the vessels and the gears, etc.

Based on IFREMER expertise, there is no overexploitation of the stock.

Aquaculture

No production over the period covered by the study.

1.1.4 Preliminary findings on growth potential

Fishery

The prospective is stable if there are no changes in the sector.

Following points would improve the situation of the fleet:

- investment in the fleet: modernisation of vessels and construction of new vessels;
- diversification of targeted species: the fleet target a limited number of species with a large use of drift-nets. However, there is little knowledge on the other available resources and on possible markets;
- increase the level of education of fishermen;
- investment in the infrastructure.

The low financial capacity, low fisherman education level and low organisation of the sector limit this development.

Aquaculture

There are positive prospects for the aquaculture production, particularly with the development of:

- oyster farming (not in operational phase while this study is conducted);
- fresh water farming, with the new hatchery in Soucoumou that may provide a first production in 2017.

1.2 Extraction of oil and gas

1.2.1 Overview

Oil exploration is led in Guiana since the 2000s under the licence 'Guyane Maritime'. In 2011, an oil drilling has been positive and oil has been identified at a depth of 6.000 m. Four new oil drilling have been led in 2012-2013 but none of them has been successful. The licence ended in June 2016 and a request for renewal has been submitted.

Two other applications have been submitted:

- UDO, in deep-sea waters;
- SHELF: the area is 20 nautical miles from the coast and covers a fishing area. The professional organisation for fishery considers that it could disturb their activity.

While the data collection of this study was led (Autumn 2016), the answers for these requests have not been provided from the French Authorities. However, on the 23rd of June 2017, Nicolas HULOT, French Ministry in charge of environment, announced its objective to stop oil exploration and extraction in both Metropolitan France and Outermost Regions. A legislative text shall be proposed during the Autumn 2017⁴.

An environmental assessment of the exploration led in 2012 showed that oil exploration in French Guiana had direct impact on marine bio-resources, the largest impacts being related to seismic waves on cetaceans and turtles, and to a lesser extent on fish. The presence of nautical equipment and vibrations also have an impact on fish, cetaceans and turtles. The exploration may also have an impact on other activities due to the presence of facilities, vibrations and wastes may also have an impact on other sector (fishery, maritime transport) (⁵).

1.2.2 Geographical distribution

The following map indicates the area covered by each licence application.

(⁴) http://www.lemonde.fr/planete/article/2017/06/23/nicolas-hulot-s-engage-a-interdire-tout-nouveau-permis-d-exploration-d-hydrocarbures_5150067_3244.html.

(⁵) Permis d'exploration Guyane Maritime — Réalisation d'une campagne sismique 3D — Volume 1 — Résumé non technique du document d'appréciation des impacts environnementaux (DAIE) sismique — CREOCEAN for Shell, 2012.

Figure 2 — Map of oil extraction licences demands



Source: DR in Le Marin

1.2.3 Main socio-economic trends

The turnover of the only company registered in French Guiana on oil extraction is EUR 16 million in 2011 (last year available). The total costs of the exploration phase are estimated at € 500 million ⁽⁶⁾.

Only one company is registered in the NACE codes for this maritime activity in French Guiana. The other companies were active but are registered in other areas.

1.2.4 Preliminary findings on growth potential

Impacts of oil exploration and extraction are negative on the environment. Alternative activities shall be developed in order to fulfil sustainable Blue Growth objectives.

The potential development of this activity will depend on:

- the results of the oil drilling;
- the strategy of stakeholders;
- the decisions from French authorities to allow further exploration and extraction (see previous section on the objectives indicated by the French Ministry in charge of environment).

⁽⁶⁾ http://www.lesechos.fr/13/11/2013/lesechos.fr/0203122153857_petrole--le-programme-d-exploration-de-shell-en-guyane-s-acheve-sur-un-echec.htm#.

1.3 Maritime transport

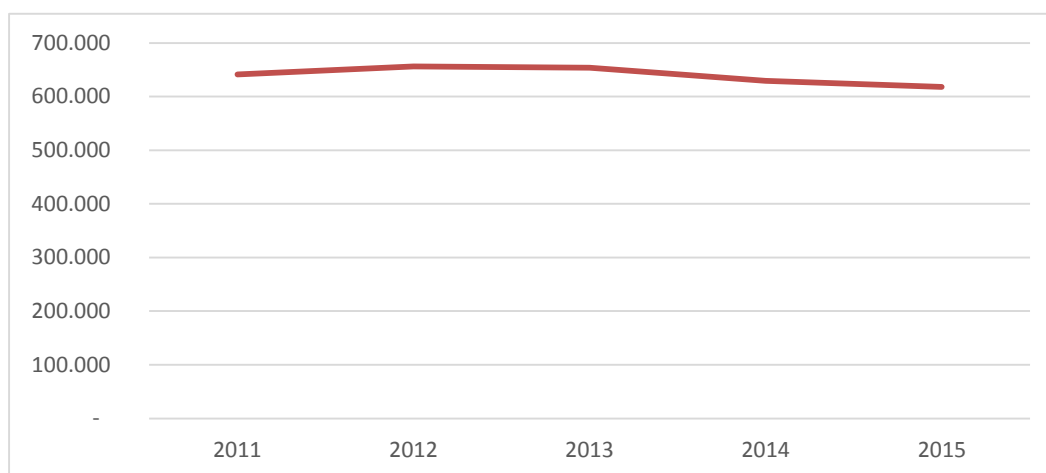
1.3.1 Overview

This activity is mainly composed by sea freight water transport in the harbour of Degrad des Cannes (DDC) and to a lesser extent in Saint-Laurent-du-Maroni harbour. Degrad des Cannes harbour is a public body since the 1st of January 2013.

In 2015, in DDC and Pariacabo (Kourou), a total number of 203 stopped freight ships has been recorded corresponding on 617 832 tonnes of freight volume for 53 870 twenty foot equivalent units or TEUs.

The volume of freight slightly decreased in the recent year. It is directly related to the state of the local economy and the crisis in the building sector.

Figure 3 — Evolution of maritime freight in Grand Port Maritime de Guyane between 2008 and 2013 (tonnes)



Source: Grand Port Maritime de Guyane

Other less important activities exist:

- passenger transport / excursion: there are few tourism vessels between Kourou and Salut islands for tourist transportation;
- inland freight water transport (freight and passengers): a large number of small vessels handle transport on the rivers to supply hinterland and they play an important role in some areas. For instance, Maripasoula city (located in the Amazonian forest) is only supplied by plane and river connexions; there is no road connexion with the city.

1.3.2 Geographical distribution

This activity is mainly located in Degrad de Cannes Harbour (East of Cayenne) and to a lesser extent in Pariacabo and Saint-Laurent du Maroni (border with Suriname).

1.3.3 Main socio-economic trends

The development of maritime transport is related to:

- the economic evolution in Guiana: the building sector decreased in the last years;
- demographic increase: population is highly growing in French Guiana;
- for Kourou spatial center.

1.3.4 Preliminary findings on growth potential

There are positive trends for this activity:

- increase of population (most of the supply for Guiana occurs by sea);
- short-sea shipping projects (between Brazil and Suriname);
- positive prospective for Kourou spatial center.

1.4 Ports (including dredging)

1.4.1 Overview

There are three ports for freight in French Guiana:

- Grand Port Maritime de Guyane in Degrad-des-Cannes (in Rémire-Montjoly, in Cayenne area). Almost 95 % of imported and exported products from Guiana go through this port.
- Pariacabo (Kourou) under the authority of the GPMGuyane and managed by the Centre National D'Etudes Spatiales (CNES). Most of the freight is related to the spatial center. A share of the activity also focuses on oil freight with a oil storage center in Kourou to supply the west part of French Guiana.
- Port de l'Ouest (Saint-laurent-du-Maroni), on the Maroni river (30 km far from the coast). There are about 25 stops / year. The port is owned by local authorities (Communauté de Communes de l'Ouest Guiana).

The Grand Port Maritime de Guyane is a public body since the 1st January 2013, in relation to the French reform of overseas seaports (Loi n°2012-260 — 22nd February 2012).

Ports activity is constrained by the muddy waters of the Amazonian rivers. The draught is limited in each of these ports, while 12 m are needed for the largest ships, the draught is only 6 m in Degrad-de-Cannes and 3.5 in Port de l'Ouest.

Dredging must be operated in each of these ports. For GPM Guyane, it amounted to EUR 8.9 Million in 2014 for a total budget of EUR 19Million (47 % of total budget).

There is only one marina in French Guiana, in Degrad-des-Cannes.

1.4.2 Geographical distribution

The three ports are located:

- In Rémire-Montjoly (Degrad-des-Cannes)
- In Kourou (Pariacabo)
- In Saint-Laurent-du-Maroni (Port de l'Ouest).

1.4.3 Main socio-economic trends

Limited detailed information is available on this sector.

Based on information available, this sector increased in the last years due to the increase of maritime freight.

1.4.4 Preliminary findings on growth potential

The potential for this activity is positive, due to:

- project of new ports in Mana / Saint-Laurent du Maroni (see below);
- project of offshore port by GPMGuyane (see below);
- increase of maritime freight (population increase, short-sea shipping project, spatial center activity).

Specific projects are presently under development / reflexion:

- development of a **maritime port in Saint-Laurent du Maroni** in the West of French Guiana.

This project would support the development of gold mining in the West of French Guiana (two projects under development). This activity would require the supply of several inputs (fuel, explosive; cyanide, etc.).

Furthermore, this would allow the development of short-sea shipping between Cayenne and Saint-Laurent du Maroni.

- Project for a **multi-purpose platform**: the objective is to develop an offshore platform (between 10 to 20 ha platform). The project is led by Grand Port Maritime de Guyane with the support of DCNS. It which would provide:

- maritime transport infrastructure;
- services for oil extraction companies (if extraction is developed);
- support for offshore aquaculture production: securing the offshore area and possible use of tanks under the platform.

The project has two assets:

- it tackles the issue of low draught in maritime ports in French Guiana;
- it takes advantages of the future development of traffic from Panama.

This project is under reflexion, further studies are needed to assess the feasibility of the project (estimated costs of studies: € 2-3 million), the project could be implemented in 2020 and the total costs are estimated to € 1-1,5 billion.

1.5 Coastal tourism

1.5.1 Overview

In 2015 ⁽⁷⁾, 220 000 visitors came in French Guiana. Almost half of the visitors came for professional reasons (48 %), one third (33 %) came to visit family and friends ('affinity tourism') and only 17 % came for leisure purposes. Due to the large share of professional visitors and affinity tourism, more than two thirds (68 %) of visitors come in French Guiana lonely and less than one third of visitors come with their families, as a couple or in a group.

Most of visitors are French: 70 % from Metropolitan France, 13 % from Martinique and 10 % from Guadeloupe.

French Guiana is as large as Portugal, 98 % of the territory is covered by Amazonian forest (with a highly rich biodiversity) and the coastline is 378 km long. Thus, forest plays a major role in the territory. However, from a touristic point of view, coasts have also a great importance as:

- most of the population and economic activities being located in the coastal area (Cayenne, Kourou, Matoury, Remire-Montjoly) or close to coastal area (Saint Laurent du Maroni);
- most of the tourism is due to business and affinity tourism.

Thus, among the main visited touristic sites in 2015 in French Guiana, the first one is related to maritime tourism (Salut islands). Indeed, the main touristic sites visited in French Guiana in 2015 are:

- Salut Islands: 48 790 visitors (including 9 200 cruise tourists);
- French Guiana zoo: 37 000 visitors;
- Space Center in Kourou: 21 500 visitors;
- Kaw marsh: 14 000 visitors.

Compared to territories in the Caribbean area, French Guiana has limited beaches with clear and blue waters. Because of sediments carried by Amazonian rivers, the coastal waters are brown (even they are safe and clean). However, the main activity for tourists is beach (for 52 % of them) and many other activities are related to sea or rivers:

- activity related to space activity (for 41 % of visitors);
- hike or walk (38 %);
- Salut Islands (27 %);
- excursion on a river, a creek or a marsh (24 %);
- marine turtle observing (22 %);
- spend one night in forest (19 %);
- observation of marine turtle (14 %);
- sea excursion (11 %);
- excursion on Maroni river (10 %).

⁽⁷⁾ Observatoire du tourisme de Guyane, Tourisme en Guyane — Chiffres clés 2015.

Accommodation

There are 365 structures for accommodation in French Guiana for a total capacity of 6 254 beds. Hotels account for 60 % of the bed capacity, followed by touristic camps (including traditional 'carbets') for 36 % and furnished flat and guest houses (13 %). Two cities (Cayenne and Kourou) account for 43 % of the total number of beds ⁽⁸⁾.

Table 6 — Number of structures for accommodation and number of

	Hotels	Furnished flats and guest rooms	Touristic camps (incl. 'carbets')	Total
Nb of structures	38	267	60	365
Nb of beds	3 780	844	1 630	6 254
% nb of beds	60 %	13 %	36 %	100 %

Source: Observatoire du tourisme de Guyane

The occupancy rate for hotels is low and decreased in the last years ⁽⁹⁾:

- 2010-2013: 59.1 %
- 2014: 52.3 %
- 2015: 47 %.

1.5.2 Geographical distribution

Coastal tourism is located in the following areas:

- Salut islands (in front of Kourou) and in main cities
- Cayenne
- Kourou
- Other areas for observation of marine turtle (west and east of French Guiana).

1.5.3 Main socio-economic trends

Limited economic data are available on long period tourism. An observatory for tourism in French Guiana has recently been implemented by Comité du Tourisme de Guyane.

1.5.4 Preliminary findings on growth potential

The potential of development is high but some barriers remain:

- image of French Guiana;
- cost of air connexions: the flight ticket from Metropolitan France is higher for French Guiana than for Martinique and Guadeloupe ⁽¹⁰⁾;
- administrative and sanitary barriers: visas and vaccine;
- lack of investment and lack of organisation of the sector.

Specific project on Blue tourism is currently under development: this will focus on coastal tourism, yachting, cruise tourism and connections between coastal areas and hinterland. The objective is to develop a project certified under 'Odyssea Blue Tourism' scheme.

1.6 Cruise tourism

1.6.1 Overview

There is an increasing development of cruise tourism in French Guiana. International ships make stops in Salut Islands and in Cayenne (Degrad-des-Cannes).

There were about 18 000 cruise tourists in French Guiana in 2012.

⁽⁸⁾ Observatoire du tourisme de Guyane, Hôtels : chiffres clés, Juin 2016.

⁽⁹⁾ Observatoire du tourisme de Guyane.

⁽¹⁰⁾ Le tourisme en Guyane, IEDOM, Note expresse N° 312, February 2015.

The development is limited by the draught in French Guiana ports, local infrastructure and organisation of the sector.

1.6.2 Geographical distribution

The stops for cruising boats are Salut islands (Kourou area) and Degrad-des-Cannes port (Cayenne area).

1.6.3 Main socio-economic trends

No information is available.

1.6.4 Preliminary findings on growth potential

There is a potential for growth for cruise tourism in French Guiana, through:

- a development of the stops for international cruise vessels;
- a structuring of cruising by local stakeholders, on the coast and on the rivers.

A specific committee has been established in French Guiana to explore the way of developing cruise tourism.

1.7 Marine renewable energy

1.7.1 Overview

There is no marine renewable energy in French Guiana at present. However, there are inland renewable energies, notably hydraulic energy which accounts for 56 % of the electric production in French Guiana and 9 % of energy consumption ⁽¹¹⁾.

The regional programme for energy planning (SRCAE, 2012) indicates that the shallow depth and natural silting limits marine renewable energy. However, the regional authority (Collectivité Territoriale de Guyane) is considering the possibility to support a study to analyse maritime streams and to assess the potential of hydrokinetic power.

1.7.2 Geographical distribution

No activity.

1.7.3 Main socio-economic trends

No activity.

1.7.4 Preliminary findings on growth potential

The regional programme for energy planning (SRCAE, 2012) identifies sources of marine energy: tides, waves, stream, thermal energy and states that each of these sources should be further investigated.

There is a potential for the development of marine renewable energy in medium-long terms in French Guiana. No detailed analyses are available and the feasibility study which could be launched by regional authority should give first inputs.

1.8 Possible impacts of climate change in French Guiana ⁽¹²⁾

Several studies about the impact of climate change in French Guiana have been conducted. In French Guiana, temperatures have risen by +0.28 per decade over the period 1965-2009. Several impacts have been pointed out. They mainly concern:

- Human public health: related to the increases in pests and disease: French Guiana is exposed to several vector-borne diseases (local equatorial humid climate is

⁽¹¹⁾ Schéma Régional du Climat, de l’Air et de l’Energie (SRCAE), 2012.

⁽¹²⁾ European Commission, 2014, The economic impact of climate change and adaptation in the Outermost Regions,
http://ec.europa.eu/regional_policy/sources/activity/outermost/doc/impact_climate_change_en.pdf

favourable of several insect species). An increase of temperature, in particular during the rainy season, could further contribute to the persistence and implantation to such vectors. This issue may have impacts on agriculture related to the decrease of rainfall in certain periods could favour the spread of pests.

- Environment and others: in fact, since 1970, an increase of low-flow periods during dry season is observed in lakes and rivers. This is likely to impact biodiversity and the quality of ecosystems, as well as the availability of water. This would also have impacts on transport for those villages/areas which rely on river transport (impacts were already observed in late 2012 and early 2013).
- Meteorology: related to: i) the temperature increase: which will lead for increasing demand for energy and decrease in tourism (although the majority of tourism to French Guiana is related to the space industry or family tourism), ii) the change to annual patterns of rainfall (for example wetter winters but dried summers) An increase in rainfall during rainy season as well as precipitation deficit during dry season is expected in years to come in Eastern Amazonia which may have implications for water supply and storage, iii) drought: which will affect the availability of water sources. It would lead to decreased yields. Drought will also reduce hydropower generation (which is a significant contributor to total generation within the territory) and availability of river transport.
- Coastal flooding as a result of increased storm frequency and sea level rise: Current estimates suggest an increasing risk of coastal flooding. This would negatively impact all the population and buildings located on the coast. The high level of illegal building developments in French Guiana make it harder to develop flood risk prevention planning, which increases the threat from this risk. Regional Plan for Climate, Air and Energy ('Schéma Régional Climat Air Energie') of French Guiana was set in June 2012. The document provides an overview of the contribution made by French Guiana to climate change and an assessment of vulnerability to climate change. It highlights the need for evaluating the climate dynamics and to define adaptation actions and integrate them in planning and development documents and policies.

2. Synergies and tensions between maritime activities

The table below reports synergies and tensions of each activity with other maritime activities and which are the contribution to sustainable Blue growth.

Group	Sector	Synergies with other maritime activities	Conflicts with other maritime activities	Contribution to sustainable growth
Living resources	Fisheries and aquaculture	No synergy identified with fishery. There are potential synergies between aquaculture and offshore multi-purpose platform project (ports). This platform would secure new area to develop aquaculture.	There are potential conflicts between fishery and oil extraction, depending on the areas selected for exploration or extraction.	Contribution of these activities for sustainable growth, through jobs and the development of sustainable fishery and aquaculture.
Non-living resources	Extraction of oil and gas	There are synergies between oil extraction and maritime transport and ports, this sector would indeed increase the traffic in French Guiana, both for imports and exports. There are potential synergies with multi-purpose platform project (port)	There are potential conflicts with fishery (and to a lesser extent with maritime transport) depending on the areas of exploration or extraction.	Potential contribution to job opportunities.

Group	Sector	Synergies with other maritime activities	Conflicts with other maritime activities	Contribution to sustainable growth
Shipping	Maritime transport	There are strong synergies between ports and maritime transports. Ports being the basic infrastructure for maritime transport. There are synergies with other maritime activities through the shipment of inputs and outputs.	No conflict identified	Contribution to sustainable growth through job opportunities and fuel efficiency of maritime transport.
	Ports (including dredging)	There are synergies between ports and maritime transport, and extraction of oil (multi-purpose platform)	No conflict identified	Contribution to sustainable growth through job opportunities.
Tourism	Coastal tourism	There are strong synergies between coastal and cruise tourism as cruise tourists enjoy infrastructures for coastal tourism when they land in French Guiana (Salut Island, restaurants, visits...).	No conflict identified	Contribution to sustainable growth through job opportunities and ecotourism.
	Cruise tourism	There are important synergies between cruise tourism and coastal tourism (see above) and ports which are basic infrastructure to welcome cruise ships.	No conflict identified	Contribution to sustainable growth through job opportunities.

2.1 Synoptic view of legislative, non-legislative and financial synergies and tensions among maritime activities

The following table reports a synoptic view of main synergies and tensions grouping them under legislative, non-legislative and financial frames

Synergies with other maritime activities			
ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
Fisheries and aquaculture	No synergy identified	Potential synergies between aquaculture and multi-purpose off-shore platform	
Extraction of oil and gas	No synergy identified	There are potential synergies between oil extraction and maritime transport (this would increase the volume of freight). There are strong synergies between ports and maritime transports. Ports being the basic infrastructure for maritime transport.	No synergy identified
Maritime transport	No synergy identified		No synergy identified
Ports (including dredging)	No synergy identified		No synergy identified
Coastal tourism	No synergy identified	There are strong synergies between coastal and cruise tourism: the attractiveness for	No synergy identified

Synergies with other maritime activities			
ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
		cruise tourists depends on services and infrastructure provided by coastal tourism. Coastal tourism could also benefit of a development of cruise tourism.	
Cruise tourism	No synergy identified	Strong synergies between cruise tourism and ports. The possibilities of stops for cruise vessels depend on port infrastructures. Synergies between cruise tourism and coastal tourism (see above).	No synergy identified

Conflicts with other maritime activities			
ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
Fisheries and aquaculture	No conflict identified	There are potential conflicts between fishery and oil extraction (and to a lesser extent with maritime transport), depending on the areas selected for oil extraction (if oil extraction is authorised).	No conflict identified
Extraction of oil and gas	No conflict identified		No conflict identified
Maritime transport	No conflict identified	No conflict identified	No conflict identified
Ports (including dredging)	No conflict identified	No conflict identified	No conflict identified
Coastal tourism	No conflict identified	No conflict identified	No conflict identified
Cruise tourism	No conflict identified	No conflict identified	No conflict identified

3. Best practices and flagship projects

1. **ORs concerned:** French Guiana.

Name of the practice: Development of Odyssea project for blue tourism.

Objectives: (i) Development of French Guiana as flagship destination for tourism, notably maritime tourism. (ii) Better connexion between coast and hinterland; (iii) involvement in Odyssea scheme.

Maritime activities concerned: Coastal tourism and Cruise tourism.

Results achieved: a feasibility study has been achieved. This project paves the way for the development of Blue tourism in French Guiana. It involves many partners active in the field of tourism.

Reasons for considering it as best practice/flagship project: the involvement in Odyssea allows:

- a continuous collaboration with the project partners, aiming at creating a cluster of growth and the identification of investments and projects for the blue tourism;
- to highlight the assets of tourism in French Guiana and its potential for the economic development;
- an innovative marketing approach by defining and promoting identified territorial destinations,
- an innovative approach of coastal tourism and yachting: structuring a cultural and economic itinerary from the port to the town characterized by a high level of services for visitors;
- a greater integration of the coast and the hinterland;
- a networking between all areas involved in Odyssea scheme;
- a transferability of the approach in other territories.

2. **ORs concerned:** French Guiana.

Name of the project: SEAS PLATFORM (Surveillance de l'Environnement Amazonien Assistée par Satellite).

Objectives: satellite surveillance.

Results achieved: the project was launched in 2006 and the surveillance is already in place. It is the property of Conseil Régional de Guyane since 2014.

Reasons for considering it as best practice/flagship project:

- maritime surveillance is a important issue in French Guiana;
- this innovative project allows effective maritime surveillance;
- this project is highly innovative, using satellites.

3. **ORs concerned:** French Guiana.

Name of the project/ practice: TTED system for shrimp fishery (Trash and Turtle excluder device).

Objectives: Reduce by catch of leatherback turtles in shrimp fishery.

Results achieved: implementation of a device on shrimp vessels to reduce by catch of leatherback turtles.

Reasons for considering it as best practice/flagship project:

- selectivity is a major issue for fishery sector;
- this project allowed to improve sustainability of the shrimp fishery through an innovative method;
- collective action: It covers all fishermen involved shrimp fishery.

3.1 Best practices and flagship projects details

Name of the project/ practice	Leading actor(s)	Other subjects/ stakeholders involved	Timing	Maritime sectors involved	Budget	Programming document	Website
Development of Odyssey project for blue tourism (French Guiana)	CCIG — Chambre de Commerce et d'Industrie de Guyane	Stakeholders involved in tourism and yachting	Under development	Coastal tourism Cruise tourism	Not specified	Feasibility study	No website
SEAS PLATFORM (Surveillance de l'Environnement Amazonien Assistée par Satellite) (French Guiana)	Collectivité territoriale de Guyane	IRD, CNES/Centre spatial, Préfecture de la Région Guyane	Operational phase	Potential for all activities	Not specified	Not specified	https://www.ird.fr/la-mediatheque/videos-en-ligne-canal-ird/seas-guyane/programmation-de-l-antenne-reception-des-images-acquisition-et-stockage-comment-ca-marche
<i>TTED system for shrimp fishery (Trash and Turtle excluder device)</i> (French Guiana)	Fishery stakeholders	Selectivity	Implemented in 2010	Fishing sector	Not specified	Not specified	https://www.ctguyane.fr/ressources/File/2012/Experience_TTED.pdf

4. Gap analysis

In this section, each maritime activity has been analysed in order to identify 'what is missing for a sustainable Blue Growth' in terms of 'Human resources skills', 'Infrastructures', 'Research' and 'Data'.

• **Fishery and aquaculture**

Human resources skills	<p>The level of education of fishermen remains very low in French Guiana, 93.6 % of people involved in the fishery have no education level or just a primary school level ⁽¹³⁾.</p> <p>There are great challenges on evolution of the fishing modernisation and modernisation of the fleet with a few species targeted, a low level of profitability and a large use of drift nets.</p> <p>Education and training (new method for fishery, security, etc.) are key issues for the development and the resilience of the sector, in order to implement new practices, structure the supply chain and develop new markets.</p>
Infrastructures	<p>The level of development for infrastructure is very low in French Guiana. There is an important need for infrastructure in the fishery sector, with specific infrastructure for fishermen (landing sites, ice infrastructure, storage equipment, etc..).</p> <p>The main fishing ports being:</p> <ul style="list-style-type: none"> • Cayenne area: Cayenne, Rémire Montjoly and Le Larivot • Western area: Sinnamary, Iracoubo-Organabo, and Awala Yalimapo • Eastern area: Saint-Georges • Kourou. <p>This lack of infrastructure limits the development of the sector.</p> <p>The aquaculture sector being at a pre-mature stage, the level of infrastructure is very low. There is a current project of hatchery which would be a first step to develop the sector of freshwater aquaculture.</p>
Research	<p>There is a need for research and experiments to develop new method and technics of fishery and to develop aquaculture.</p>
Data	<p>IFREMER implemented 'Système d'Informations Halieutiques' (SIH) in French Guiana which provides information on fishery sector. However, some of the data displayed are estimated and all historical trends are not available. Some gaps remain on the knowledge on marine resources.</p>

• **Extraction of oil and gas**

Human resources skills	<p>Oil extraction is operated by international companies. Employees are recruited by international oil companies. The human resources skills are not considered as a gap for the development of oil extraction.</p>
Infrastructures	<p>At this stage, oil is under exploration. Infrastructures don't limit the development of exploration.</p>
Research	<p>Oil research is in progress.</p>
Data	<p>Data on exploration are available.</p>

⁽¹³⁾ European Commission, 2014, The economic impact of climate change and adaptation in the Outermost Regions, http://ec.europa.eu/regional_policy/sources/activity/outermost/doc/impact_climate_change_en.pdf.

● **Maritime transport**

Human resources skills	Maritime transport covers a large of types of jobs, from low-educational jobs to high-educational jobs. In some cases, the availability of human resources with very specific skills remains a challenge in a small territory like French Guiana.
Infrastructures	Grand Port Maritime de French Guiana faces a specific issue of low draught and high costs for dredging, this limits the development of maritime transport in French Guiana. The Grand Port defined an investment strategy, the modernisation of the infrastructure remains a key issue to improve productivity and competitiveness. New infrastructures are under development in the west for French Guiana and the Grand Port Maritime also has project of an offshore multi-purpose platform.
Research	Research could be implemented to improve productivity of the port.
Data	Data on freight maritime transport are available. Data on the economic importance of the sector are missing.

● **Ports (including dredging)**

Human resources skills	Maritime transport covers a large of types of jobs, from low-educational jobs to high-educational jobs. In some cases, the availability of human resources with very specific skills remains a challenge in a small territory like French Guiana.
Infrastructures	Grand Port Maritime de French Guiana faces a specific issue of low draught and high costs for dredging, this limits the development of maritime transport in French Guiana. The Grand Port defined an investment strategy, the modernisation of the infrastructure remains a key issue to improve productivity and competitiveness. New infrastructures are under development in the west for French Guiana and the Grand Port Maritime also has project of an offshore multi-purpose platform.
Research	Research could be implemented to improve productivity of the port. Further researches are needed to develop the project of Multi-Purpose Platform.
Data	There are full set of data on the port traffic. Data on the economic importance of the sector are missing.

● **Coastal tourism**

Human resources skills	There is a need of basic education for people involved in coastal tourism: entrepreneurship, language skills, specific technical skills (security, cooking, hotel services, etc.). Specific educational scheme on the accommodation industry exist in French Guiana, however, the education of stakeholders (hotel, restaurants, etc.) would increase resilience of the sector. From a general point of view, a better education of stakeholders would foster the development of the sector and the adaptation to client needs.
Infrastructures	There is a lack of adapted infrastructures for tourism and a few sites gather most of the touristic activities (Salut Islands, Space Center). Larger infrastructures would allow a diversification of tourism in French Guiana, both blue tourism (Odyssey project) and development of touristic activities related to the Amazonian forest.
Research	Further research could support the development of the sector: strategy, impact, economic development, etc.
Data	There is a lack of data on tourism in French Guiana. An observatory has been implemented recently to tackle this challenge.

● **Cruise tourism**

Human resources skills	This sector is emerging in French Guiana. Education of stakeholders to its specificities would promote its development.
Infrastructures	There is a lack of infrastructures to welcome large cruising ships in French Guiana, both in Salut Islands and Cayenne area. There is a potential for development of cruise tourism in French Guiana, however, this remains lower than in Caribbean.
Research	Further research could support the development of the sector in order to define the best strategy for cruise tourism in French Guiana. A specific working group has been set to define the strategy for cruise tourism on the territory.
Data	Little data on cruise tourism are available, it focuses on number of passengers and number of boats.

4.1 Synoptic view on the gaps identified

The following table reports a synoptic view of main gaps identified grouping them by 'legislative', 'non-legislative' and 'financial' gaps.

ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
Fishery and aquaculture		There are important gaps in terms of level of education of fishermen and lack of infrastructures (for both aquaculture and fishery) There are important gaps in terms of knowledge of marine resources, all fish stocks are not assessed.	There is an important gap for fishery and aquaculture concerning the lack of investment capacity from private stakeholders. There is an important need for renewal of the small-scale fleet.
Extraction of oil and gas	At present, an application for new oil drilling has been submitted but not authorised yet (when the present study is led).	Some oil drillings have been positive in French Guiana but the potential for oil extraction is not well established at this stage.	Oil extraction requires large funds. This investment is led by international companies of oil extraction.
Maritime transport and ports (including dredging)		Grand Port Maritime de French Guiana faces a specific issue of low draught, this limits the development of maritime transport in French Guiana. Continuous investments are needed to develop infrastructures and maintain competitive at regional level.	There are high costs of dredging.
Coastal tourism		There is a lack of specific skills for the accommodation sector. A monitoring tool for tourism has been recently developed in French Guiana (observatory), this tool should be promoted and is an important step to further develop tourism in French Guiana.	There is a lack of investments and infrastructures for tourism in French Guiana.
Cruise tourism		This sector is under development, however, there is a lack of infrastructure to welcome large cruise vessels and lack of organisation of the sector to welcome tourists in Cayenne.	There is a lack of infrastructure. The return on investment for cruise infrastructure should be further analysed in French Guiana.

Mapping actors and maritime strategies

5. Mapping public authorities

Table 7 — Public authorities surveyed in French Guiana

OR/sea basin	Maritime sector(s)	Name of the authority	Main roles and responsibilities	Address	Website
French Guiana	All activities	Préfecture de Guyane	Administrative authority	rue Fiedmond, BP 7008 — 97 307 CAYENNE Cedex	www.guyane.pref.gouv.f
French Guiana	Fishery, aquaculture	Direction de la Mer	Administrative authority	2 bis rue Mentel — 97300 CAYENNE	http://www.dm.guyane.developpement-durable.gouv.fr/
French Guiana	Oil extraction	DEAL	Administrative authority	CS 76003 — 97306 CAYENNE CEDEX	http://www.guyane.developpement-durable.gouv.fr/
French Guiana	All activities	Collectivité Territoriale de Guyane (CTG)	Economic development	Carrefour de Suzini 4179 route de Montabo	https://www.ctguyane.fr/
French Guiana	Tourism	Comité du Tourisme de Guyane (CTG)	Economic development Monitoring	12, rue Lallouette 97300 CAYENNE	http://www.guyane-amazone.fr/
French Guiana	Port Maritime transport	Grand Port Maritime de Guyane (GPMLM)	Port authority	N3, Remire-Montjoly, Guyane	http://www.portdeguyane.fr/
French Guiana	Fishery	IFREMER	Research Monitoring	Domaine de Suzini BP 477 97331 Cayenne	http://wwwz.ifremer.fr/guyane/
French Guiana	All activities	INSEE	Research, statistics	23 avenue Pasteur — CS 36017 — 97306 Cayenne CEDEX	https://www.insee.fr/fr/accueil

6. Summary of existing maritime strategies

Several strategies have been identified:

- national strategies covering Blue economy and port strategy;
- regional strategies on territorial planning, tourism, fishery and aquaculture;
- specific strategy on ports.

6.1 *Loi sur l'économie bleue — 2016 (Regulation on Blue Economy)*

- **Geographical level (local/national/sea basin)**

National

- **Maritime sectors involved**

All sectors.

- **Objectives**

General objective: Foster new perspectives of development and attractiveness for all maritime actors.

- **Implementing tools**
 - simplify the regulation on maritime activities;
 - reinforce the competitiveness of the French flag;
 - reinforce the maritime and in ports security;
 - foster the evolution of port activities;
 - modernization of the fisheries and aquaculture sector;
 - development of the yachting sector;
 - better integration of the maritime responsibility.

- **Actors involved and beneficiaries**

All maritime actors.

- **Possible contribution to the fulfilment of BG objectives**

Fostering blue growth.

- **Website address**

[http://www.developpement-durable.gouv.fr/IMG/pdf/Loi_Economie_bleue - Dossier - Juin 2016.pdf](http://www.developpement-durable.gouv.fr/IMG/pdf/Loi_Economie_bleue_-_Dossier_-_Juin_2016.pdf).

6.2 *Operational programme for European Maritime and Fisheries Fund (EMFF)*

- **Geographical level (local/national/sea basin)**

National/regional.

- **Maritime sectors involved**
 - fisheries and aquaculture
 - port (fishing ports).

- **Objectives**

Promoting an economy sectors of fisheries and aquaculture more competitive, based on knowledge and innovation; and promoting a more efficient economic development with the use of resources and low carbon emissions.

Compensation plans for additional costs in the ORs are implemented in the context of EMFF.

- **Implementing tools**

Operational programme.

- **Actors involved and beneficiaries**

National and regional authorities, stakeholders involved in fishery and aquaculture.

- **Possible contribution to the fulfilment of BG objectives**

Development of port and fishery and aquaculture activities.

- **Website address**

https://ec.europa.eu/fisheries/sites/fisheries/files/docs/body/op-france_fr.pdf.

6.3 Operational programme ERDF / ESF– French Guiana

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

All sectors covered.

- **Objectives**

The objectives of the operational programmes are:

- support applied research, experiments and business development;
- development of IT;
- support energy effectiveness;
- support sustainable development through infrastructure;
- improvement of health and social services;
- development of educational infrastructures;
- promote employability.

- **Implementing tools**

Operational programme.

- **Actors involved and beneficiaries**

Managing authority: Collectivité territoriale Guyane.

- **Possible contribution to the fulfilment of BG objectives**

ERDF and ESF are important source of funding for the territorial and social development, for all sectors.

- **Website address**

<http://www.europe-en-france.gouv.fr/Des-programmes-pour-qui-pour-quoi/Programmes-2014-2020#/regional>.

6.4 Contrat Plan Etat-Région (CPER) Guyane 2015-2020

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

All sectors.

- **Objectives**

The themes covered by the plan are:

- infrastructures and collective basic services, territories and populations vulnerability;
- sustainable urban planning and support to territorial dynamics;
- management of environmental and energy resources (energy and ecological transition);
- development of research and innovation;
- social inclusion and employability;
- mobility;
- digital.

CPER contributes to the implementation of EU funds.

- **Implementing tools**

Detailed programme with budget from national and local authorities.

- **Actors involved and beneficiaries**

National authorities, local authorities and local stakeholders.

- **Possible contribution to the fulfilment of BG objectives**

Development of several blue economy sectors (tourism, renewable energies, and ports) through investments, research and innovation and education and training.

- **Website address**

<http://www.guyane.gouv.fr/Politiques-publiques/Collectivites-locales/Contrat-de-plan-Etat-Region-Guyane-2015-2020>.

6.5 *Stratégie nationale portuaire en outre-mer (2016) (National strategy for ports in outermost regions)*

- **Geographical level (local/national/sea basin)**

National.

- **Maritime sectors involved**

Sectors involved:

- maritime transport
- port
- cruise tourism.

- **Objectives**

Development of the port activities.

- **Implementing tools**

Definition of axis:

- port competitiveness;
- adaptation of ports to the evolution of maritime transport;
- preservation of environment of sea and coast;
- support regional economic development;
- promote social dialogue.

- **Actors involved and beneficiaries**

Main actors involved:

- Ministère de l'Environnement, de l'Énergie et de la Mer
- Ministère des outre-mer
- port authorities
- local stakeholders.

- **Possible contribution to the fulfilment of BG objectives**

Ports are key infrastructures for the development of blue economy in ORs and they are related to several activities:

- maritime transport
- cruise tourism
- coastal tourism
- ship repair.

- **Website address**

<http://www.developpement-durable.gouv.fr/La-Strategie-nationale-portuaire.html>.

6.6 Schéma d'Aménagement Régional (SAR) de la Guyane (2016) (Regional planning)

- **Geographical level (local/national/sea basin)**

It covers French Guiana.

- **Maritime sectors involved**

All activities are potentially covered.

It notably focuses on:

- energy
- fishery
- maritime transport
- port
- coastal tourism
- cruise tourism.

- **Objectives**

The Collectivité Territoriale de Guyane is the new local authority (December 2015) which replace the Conseil Général and the Conseil Régional.

The SAR is the tool for territorial planning. It aims at defining a frame for French Guiana in terms of:

- sustainable development
- environment protection
- territorial development.

- **Implementing tools**

The following tools are implemented:

- Spatial planning;
- Environment planning ('trame verte et bleue');
- Infrastructure planning;
- Planning for maritime issues ('Schéma de mise en valeur de la mer');
- Partnerships with actors based on 'territorial contracts'.

- **Actors involved and beneficiaries**

The SAR is led by the local authority (Collectivité Territoriale de Guyane) and potentially involves all stakeholders.

- **Possible contribution to the fulfilment of BG objectives**

SAR will contribute to Blue growth through:

- economic development of maritime activities;
- environment preservation.

- **website address**

<https://www.ctguyane.fr/sar-approuve/>.

6.7 *Schéma Régional de Développement du Tourisme et des Loisirs de Guyane (2013) — (Tourism regional planning)*

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

Coastal tourism and cruise tourism.

- **Objectives**

Development of tourism in French Guiana.

- **Implementing tools**

Operational action plans:

- marketing
- development
- quality
- education
- monitoring.

- **Actors involved and beneficiaries**

The strategy is led by Comité du Tourisme de Guyane and it involves all stakeholders from the tourism sector.

- **Possible contribution to the fulfilment of BG objectives**

Development of coastal and cruise tourism.

- **Website address**

<http://www.guyane-amazonie.fr/SRDTLG>

6.8 *Schéma regional de développement de l'aquaculture en Guyane (2012)*

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

Marine and continental aquaculture.

- **Objectives**

Definition of the potential of development of aquaculture in French Guiana.

- **Implementing tools**

Feasibility study, no implementing tool.

- **Actors involved and beneficiaries**

Conseil Régional de Guyane (now Collectivité Territoriale de Guyane) and stakeholders involved in aquaculture.

- **Possible contribution to the fulfilment of BG objectives**

Development of aquaculture.

- **Website address**

<https://www.ctguyane.fr/ressources/File/rp/2013/SRDAM-Guyane.pdf>.

6.9 *Projet stratégique 2014-2018 — Grand Port Maritime de la Guyane*

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

Maritime activities covered:

- port
- maritime transport
- cruise tourism.

- **Objectives**

The objectives of the strategy are:

- definition of an initial document for the strategy of the newly created Grand Port Maritime de la Guyane;
- improve port performance and competitiveness;
- increase capacity of the port;
- anticipate future evolutions.

- **Implementing tools**

Definition of two action plans covering:

- port equipment
- sustainable development.

- **Actors involved and beneficiaries**

Strategy implemented by Grand Port Maritime de Guyane.

- **Possible contribution to the fulfilment of BG objectives**

Development of port, maritime transport and cruise tourism.

- **Website address**

<http://www.portdeguyane.fr/projet-strategique-2014-2018/>

6.10 *Plan régional d'organisation et d'équipement des ports de pêches de Guyane (2016) (Fishing port organisation and equipment planning)*

- **Geographical level (local/national/sea basin)**

French Guiana.

- **Maritime sectors involved**

Maritime activities covered:

- port
- fishery.

- **Objectives**

The objective is to develop port equipment for fishery, based on the needs of the sector and the available resources (notably EMFF).

- **Implementing tools**

Planning for port equipments.

- **Actors involved and beneficiaries**

Strategy led by Collectivité Territoriale de Guyane.

- **possible contribution to the fulfilment of BG objectives**

Development of port and fishery.

- **Website address**

No website.

7. Mapping main stakeholders

Table 8 — Main stakeholders surveyed in French Guiana

OR/sea basin	Maritime sector(s)	Name of the stakeholders	Main roles and responsibilities	Address	Website
French Guiana	All activities	Cluster Maritime de Guyane	Professional organisation	ZI Degrad des cannes GIP+ 97354 REMIRE MONTJOLY	https://sites.google.com/site/clustermaritimeguyane/home
French Guiana	Fishery and aquaculture	Comité Régional des Pêches et des Elevages Marins de Guyane (CRPMEM)	Professional organisation	Port du Larivot Pôle administratif 97351 Matoury	No website
French Guiana	Aquaculture	Association Aquacole de Guyane (AAG)	Professional organisation	81 rue Christophe Colomb 97300 Cayenne — Guyane	No website
French Guiana	Fishery (mainly)	Marché d'intérêt Régional	Wholesale market	Rue du Vieux Port, Cayenne	No website

Mapping Blue Growth and assessing the potential

8. Growth drivers and barriers

The following table reports growth drivers and barriers to growth of each maritime activities identified, analysing them in terms of R&D, Access to finance, Infrastructure, Education, training and skills, Public engagement and Local cooperation ⁽¹⁴⁾.

Fisheries and aquaculture		
	Drivers to growth	Barriers for growth
R&D	Support of EU funds on innovation, collective projects and pilot projects. Research led by IFREMER.	Fisheries: Lack of knowledge on the resource and on catches. Lack of private resources for R&D. Lack of innovation.
Access to finance	No driver identified.	Difficulty for operators to access to finance in both sectors. Public instruments are considered as not being adapted to the local situation (i.e. difficulties to modernise the fleet and to organise the sector). Strong need for technical support to access to public funding.
Infrastructure	Processing activity plays a role for the valorisation of local fishery products. This sector is under development in French Guiana.	Strong need for the renewal of the fleet and evolution of fishing method. Infrastructures needs for improving the sector structuring and product quality (landing ports, selling points, processing, marketing...) No capacities for aquaculture.
Education, training and skills	No driver identified.	Fishermen have generally a low education level. Important informal activity (unreported activity).
Public engagement	The sector is supported by public authorities.	Delay in the implementation of the EMFF. Support to fleet modernisation (new vessels building) is not permitted by the EMFF. Specific issue of illegal fishing in national waters from third countries.
Local cooperation ⁽¹⁵⁾	Synergies between fishery and tourism.	No conflict identified.

⁽¹⁴⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

⁽¹⁵⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

Extraction of oil and gas		
	Drivers to growth	Barriers for growth
R&D	No driver identified — Oil research under progress.	No barrier identified — Oil research under progress.
Access to finance	Involvement of international companies with financing capacities.	Large investment needed.
Infrastructure	No driver identified.	Large infrastructure needed.
Education, training and skills	Specific skills hold by oil companies.	No barrier identified.
Public engagement	Licences are managed by public authorities, which allows a planning of this sector which may have impacts on the environment.	Licences are needed to lead exploration and extraction. An application had been while the former authorisation ended (June 2016), no answer had been provided by French authorities while the present study is led.
Local cooperation ⁽¹⁶⁾	Synergy with maritime transport and ports Potential synergy with multi-purpose platform project (port).	Potential conflict with fishery, depending on the areas of exploration or extraction.

Maritime transport		
	Drivers to growth	Barriers for growth
R&D	No driver identified.	No barrier identified.
Access to finance	Large companies involved in maritime transport with self-financing capacities.	Large investment needed.
Infrastructure	Existence of infrastructure, notably the maritime port in Cayenne area (Degrad-des -Cannes).	Low draught in French Guiana ports
Education, training and skills	No driver identified.	Difficulties may be encountered when need of specific skills.
Public engagement	Public engagement for financing infrastructure. « Grand Port Maritime de Guyane » is a public body.	No barrier identified.
Local cooperation ⁽¹⁷⁾	Synergy with ports.	No barrier identified.

Port (including dredging)		
	Drivers to growth	Barriers for growth
R&D	No driver identified.	Lack of innovation to improve effectiveness and efficiency.
Access to finance	Public support.	Large investment needed.
Infrastructure	Large infrastructure developed for both maritime transport and marinas.	Large cost for dredging. Important operational costs in the port.
Education, training and skills	No driver identified.	No barrier identified. Difficulties may be encountered when need of specific skills.
Public engagement	Public engagement for financing infrastructure. « Grand Port Maritime de Guyane » is a public body.	No barrier identified.
Local cooperation ⁽¹⁸⁾	Synergy with maritime transport.	No barrier identified.

Coastal tourism		
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⁽¹⁶⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

⁽¹⁷⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

⁽¹⁸⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

	Drivers to growth	Barriers for growth
R&D	No driver identified.	Lack of innovation to develop the sector.
Access to finance	Public support for investments.	Difficulties for investments from local hotel owners.
Infrastructure	Large infrastructure for tourism (airports, hotels, etc.)	Need for investment in hotels.
Education, training and skills	Available workforce in French Guiana.	Possible lack of specific skills.
Public engagement	Local authorities involved in tourism.	No barrier identified.
Local cooperation ⁽¹⁹⁾	Synergy with cruise tourism, maritime transport (passengers), ports (marinas), airports.	No barrier identified.

	Cruise tourism	
	Drivers to growth	Barriers for growth
R&D	No driver identified.	Lack of research & innovation to tackle issues related to cruise tourism.
Access to finance	Public engagement for port infrastructure.	Large investments are needed to allow a development of cruise tourism in French Guiana, notably to welcome large vessels. Cruise tourism remains limited compared to infrastructure needed.
Infrastructure	No driver identified.	Low draught for cruise vessels.
Education, training and skills	No driver identified.	Lack of specific skills.
Public engagement	Public engagement for port infrastructure.	No barrier identified.
Local cooperation ⁽²⁰⁾	A working group has been established to develop cruise tourism in French Guiana. Cooperation with coastal tourism and ports.	No barrier identified.

	Marine renewable energy	
	Drivers to growth	Barriers for growth
R&D	R&D projects planned.	No data available.
Access to finance	Public funds for R&D.	Pre-development stage, no information of budget needed.
Infrastructure	No driver identified.	Pre-development stage, no infrastructure at present.
Education, training and skills	No driver identified.	No barrier identified.
Public engagement	Public interest in renewable energy from local authorities.	No barrier identified.
Local cooperation ⁽²¹⁾	No driver identified.	No barrier identified.

8.1 Synoptic view of legislative, non-legislative and financial growth drivers and barriers

The following table reports a synoptic view of main growth drivers and barriers grouping them under legislative, non-legislative and financial frames

⁽¹⁹⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

⁽²⁰⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

⁽²¹⁾ i.e. synergies and conflicts at local level with other activities, be they maritime or non-maritime.

Growth drivers			
ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
Fisheries and aquaculture	No driver identified	The development of processing companies is a driver for the development of the fishery sector.	Support from EU funds is an important driver for fishery and aquaculture (EMFF)
Extraction of oil and gas	Licences are managed by public authorities, which allows a planning of this sector which may have impacts on the environment.	Important synergies with other sectors, notably maritime transport and ports.	Involvement of international companies with capacities of investments.
Maritime transport and Port (including dredging)	Public engagement for financing infrastructure. « Grand Port Maritime de Guyane » is a public body	Difficulties may be encountered when need of specific skills.	Large companies involved in maritime transport with self-financing capacities
Coastal tourism	No driver identified	There are large infrastructures for tourism (airports, hotels...) which are drivers for tourism development. Workforce is available in French Guiana for the tourism sector. However, the issue of relevant education for the positions may remain. There are synergies with other sectors (marinas, passenger maritime transport, cruise tourism)	Public supports are available the investment in the tourism sector.
Cruise tourism	No driver identified	Cruise tourism may rely on large infrastructure from ports. However, these infrastructures may not be in line with cruise tourism standards. A working group has been established to develop cruise tourism in French Guiana.	No driver identified
Marine renewable energies	No driver identified	There is a public interest in renewable energy from local authorities. A feasibility study for renewable energy in French Guiana should be launched, this study will analyse drivers and barriers.	No driver identified

Barriers to growth			
ACTIVITY	LEGISLATIVE	NON-LEGISLATIVE	FINANCIAL
Fisheries and aquaculture.	Subsidies for the renewal of the fleet is not authorised under EMFF. However, there is an important need for fleet renewal in French Guiana and fishermen have a low capacity of investment.	There is a huge barrier due to lack of education of fishermen. The lack of infrastructure and R&D are also critical for the development of small-scale fleet in French Guiana. Illegal fishing is a specific issue in French Guiana's waters, limiting the competitiveness of the sector and the sustainability of the activity.	The lack of investment in the fleet is an important barrier for further development of the sector. There is need to modernise the vessels and develop a diversification of the method and species targeted. The lack of investment in infrastructures (landing ports, selling points, processing, marketing...) is also a critical point for the fishery sector in French Guiana.
Extraction of oil and gas.	An application for new oil drilling has been submitted but not authorised yet (when the present study is led).	No barrier identified.	No barrier identified.
Maritime transport and port (including dredging).	No barrier identified.	No barrier identified.	There are important costs for dredging in Grand Port Maritime of French Guiana
Coastal tourism.	No barrier identified.	There may be a lack of skilled human resources for specific position in the tourism sector, for instance in the accommodation and restaurant sectors.	There is an important need for investment in the accommodation sector in French Guiana.
Cruise tourism.	No barrier identified.	No barrier identified.	Large investments are needed in terms of infrastructures, while the potential of development is not well identified.
Marine renewable energies.	No barrier identified.	A feasibility study for renewable energy in French Guiana should be launched, this study will analyse drivers and barriers.	No barrier identified.

9. Future potential for mature and pre-developing activities

9.1 Fishery and aquaculture

- **Potential for employment**

Fishery sector already involves many people. However, the profitability of the sector remains low due to a stagnation of fish price and low innovation / modernisation in the sector. There are no specific prospects of increase of the sector, the potential development is related to infrastructure, modernisation of the fleet, education & training, marketing and organisation of the sector.

There is no aquaculture production in French Guiana, a development of the sector is expected for continental aquaculture.

- **Potential for value added**

Fishery sector mainly employs people with low level of education and training. However, the sector would benefit of higher educational level of the people involved. There is available human resource in French Guiana for fishery.

It is too early to assess the potential for value added in aquaculture.

- **Potential for competitiveness**

Availability of human resources adequately skilled.	Availability of workforce for fishery. Need to develop skills.
Potential for attracting FDI.	Limited potential due to profitability of the sector.
Availability of public funds.	Difficulties to apply for structural funds due to low organisation of the sector. Delay in the implementation of the EMFF which is the main support instrument, etc.
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	IFREMER leads research in fishery Lack of infrastructure for fishery: landing sites, ports, shelters.
Potential in terms of positioning in the international market.	French Guiana may export a few products: shrimp, processed products. Other products are marketed locally.

9.2 *Extraction of oil and gas*

- **Potential for employment**

There is an important potential for employment if further exploration is led and if there is extraction of oil is led in Guiana's waters. Employment would cover jobs in oil companies (not necessarily local employment) and indirect jobs in French Guiana in the transport, accommodation sector and suppliers.

These impacts are not defined at this stage.

- **Potential for value added**

There is an important potential for value added if further exploration is led and if there is extraction of oil is led in Guiana's waters.

These impacts are not defined at this stage.

- **Potential for competitiveness**

Availability of human resources adequately skilled.	Human resources would be managed at international level by oil companies.
Potential for attracting FDI.	Investment from oil companies.
Availability of public funds.	Public funds could support some infrastructures.
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Research and exploration is led by oil companies.
Potential in terms of positioning in the international market.	Positioning at international level in case of extraction.

9.3 Maritime transport

● Potential for employment

There is potential for development of maritime transport in French Guiana, maritime freight being the main ways to supply the territory.

Two projects may be highlighted:

- short-sea shipping project between western and eastern French Guiana;
- offshore platform project.

Furthermore, there is a potential of growth in the area due to the extension of Panama Canal even if maritime transport faces specific difficulties in French Guiana with low draught in maritime ports.

● Potential for value added

Maritime transport covers a wide range of jobs with different types of educational levels: both low and high skilled jobs.

● Potential for competitiveness

Availability of human resources adequately skilled.	Skilled profiles may be hired in Metropolitan France.
Potential for attracting FDI.	Attractiveness for international shipping companies.
Availability of public funds.	EU support for transport (infrastructure, interconnexion, etc.)
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Important port infrastructure in French Guiana.
Potential in terms of positioning in the international market.	Assets of French Guiana are limited due to low draught.

9.4 Ports (including dredging)

● Potential for employment

There is a potential for growth in port activity, notably with a project of maritime port in the western part of French Guiana and the possible project on offshore platform.

There is no potential for employment growth in Degrad-des-Cannes maritime port.

There is a potential development of marinas in French Guiana, this sector will remain limited compared to maritime ports.

● Potential for value added

Ports cover a wide range of jobs with different types of educational levels: both low and high skilled jobs.

Ports are support activities for other maritime activities:

- maritime transport
- cruise tourism
- coastal tourism (yachting).

● **Potential for competitiveness**

Availability of human resources adequately skilled.	Skilled resources may be hired in Metropolitan France.
Potential for attracting FDI.	Investments are mainly led by public organisations.
Availability of public funds.	Support from public supports (EU, national, local).
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Presence of large infrastructures.
Potential in terms of positioning in the international market	Assets of French Guiana are limited due to low draught.

9.5 Coastal tourism

● **Potential for employment**

There is a growth potential for coastal tourism in French Guiana, both in hotel / restaurant and tourism services (marinas, excursions, recreative fishing, etc.).

The objective of the regional strategy for tourism is to reach 7 500 jobs in touristic sector in 2024 in French Guiana. However, no detail is available on the types of jobs by category.

● **Potential for value added**

Coastal tourism covers a wide range of job types. Basic education and skills are often required:

- hotel/restaurant skills (cooker, waiter, etc.);
- language skills to welcome international tourists;
- security skills for sea/river excursions.

There is a strong potential for SMEs in this sector.

● **Potential for competitiveness**

Availability of human resources adequately skilled.	High school for hotel sector.
Potential for attracting FDI.	Hotel sector faces difficulties in terms of profitability. Limited potential for FDI.
Availability of public funds.	Public funds for investment and innovation.
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Presence of airport. Low research to develop tourism (despite recent implementation of Tourism observatory).
Potential in terms of positioning in the international market	French Guiana is not part of the main touristic destinations in Caribbean-Amazonia basin.

9.6 Cruise tourism

● Potential for employment

Cruise tourism remains limited in French Guiana at present. There is a potential for growth for cruise tourism in French Guiana but it is not possible to quantify it. A working group to develop cruise tourism in French Guiana has recently been established.

● Potential for value added

The potential added value is not possible to define at present. However, the identification of possible small local cruise paths close to the coast or in the Amazonian rivers could represent an important activity to be exploited in the future and create new jobs and opportunities for the local economy.

● Potential for competitiveness

Availability of human resources adequately skilled.	Existence of available skills, this could be reinforced.
Potential for attracting FDI.	At present, there is limited attractiveness identified for FDI.
Availability of public funds.	Available public funds to support investments in infrastructures.
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Existing infrastructures.
Potential in terms of positioning in the international market.	French Guiana is not part of the main destinations for cruise tourism in Caribbean-Amazonia basin.

9.7 Marine renewable energies

● Potential for employment

It is too early to quantify the potential on employment.

● Potential for value added

It is too early to quantify the potential for value added.

● Potential for competitiveness

Availability of human resources adequately skilled.	Pre-development stage. No specific skills.
Potential for attracting FDI.	Pre-development stage. No interest for FDI.
Availability of public funds.	Support from public funds (EU and national funds).
Availability of support sectors / facilities (e.g. research, infrastructures, etc.).	Pre-development stage. Study planned by regional authority.
Potential in terms of positioning in the international market.	Pre-development stage. Too early to define.

9.8 Synoptic view of the future potential by activity

The following table reports a synoptic view of main future potential for each activity grouping them by 'Potential for employment', 'Potential for value added' and 'Potential for competitiveness'.

ACTIVITY	Potential for employment	Potential for value added	Potential for competitiveness
Fishery and aquaculture	There is no potential for growth in the fishery sector in the present context: stagnation of fish price, low investment capacity, lack of infrastructure. It is too early to assess the potential for employment in aquaculture	As for employment, there are no positive prospects for value added in the fishery sector. It is too early to assess the potential for value added in aquaculture	Fishery products are mainly sold on local market. There is a potential for export out of French Guiana for specific products: processed products and shrimp.
Extraction of oil and gas	There is a high potential for employment and value added in case of oil extraction in French Guiana. This would cover local employment (transport, accommodation, suppliers) and non-local employment (international oil companies).		There is a high potential for competitiveness in case of extraction of oil. However, environmental issues shall also be considered for this sector (impact on marine resources).
Maritime transport	There is a growth potential for both employment and value added due to several projects: <ul style="list-style-type: none"> • short-sea shipping project between western and eastern French Guiana; • new maritime port in the western part of French Guiana; • project for multipurpose offshore platform. 		The competitiveness of French Guiana at international level is hampered by the low draught in Grand Port Maritime. This issue may be tackled by the project of multipurpose offshore platform.
Ports (including dredging)			
Coastal tourism	Based on the regional strategy for tourism, there is a great potential for growth in terms of employment: 7 500 jobs expected in 2024.		French Guiana has the objective to develop its competitiveness in international tourism. However, at present, French Guiana is not part of the main touristic destinations in Caribbean-Amazonia basin.
Cruise tourism	Cruise tourism remains limited in French Guiana at present. There is a potential for growth but it is not possible to quantify it at present.		A working group to develop cruise tourism in French Guiana has recently been established to develop the sector and it
Marine renewable energies	This sector is at pre-development stage. It is not possible to assess the potential at this stage.		

10. Investments opportunities

The investment opportunities identified are:

- Fishery and aquaculture:
 - modernisation of the fleet;
 - investment in aquaculture companies;
 - development of infrastructure;
 - education and training;
 - research on resource;
 - cooperation on illegal fishery.

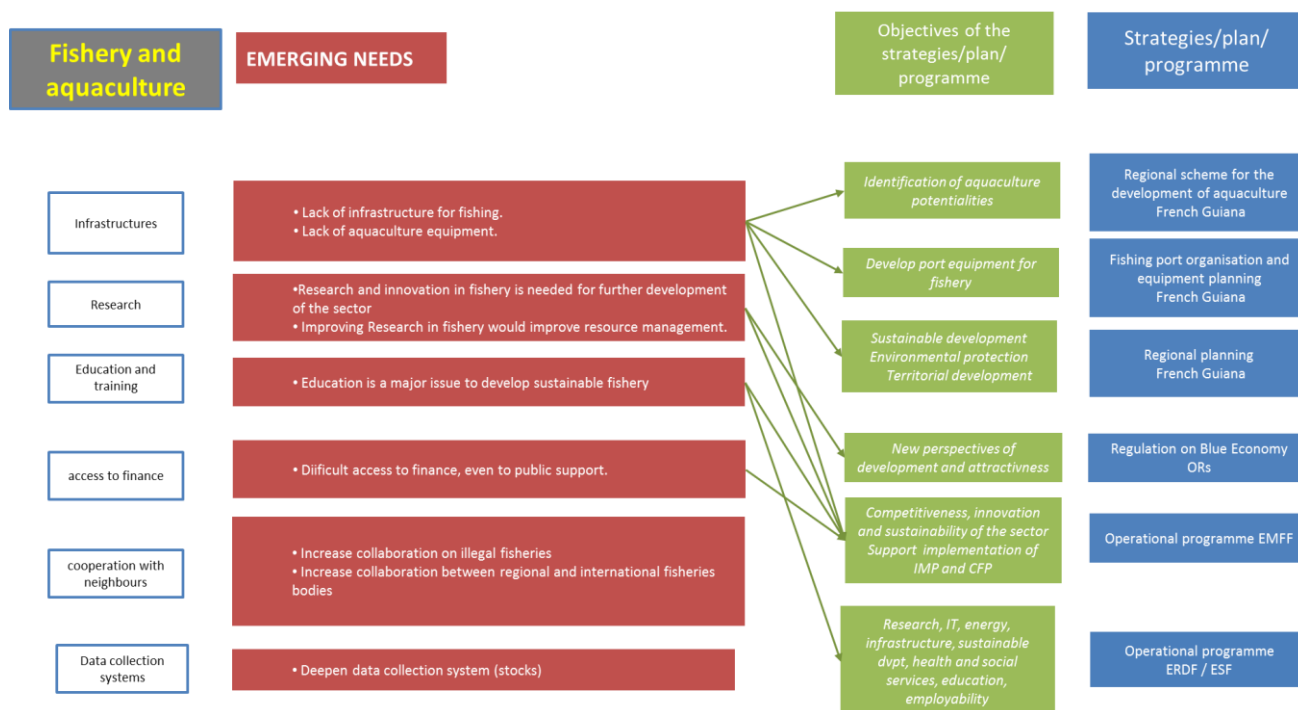
- Coastal tourism & cruise tourism: develop attractiveness of French Guiana through:
 - Infrastructure;
 - marketing;
 - organisation of the sector;
 - quality of services;
 - education and training.
- Shipping (transport and port):
 - support modernisation of the sector to maintain attractiveness while the maritime transport will further grow due to Panama Canal expansion;
 - further analyse potential for offshore platform;
 - further analyse potential for short-sea shipping.
- Renewable energy:
 - assessment of the potential for hydrokinetic power.

Identifying public and private intervention

11. Potential financial, legislative and non-legislative measures for stimulating growth

Below, logical diagrams used for the analysis have been reported.

Figure 4 — Logical diagram for fishery and aquaculture



The main needs for fishery and aquaculture are:

- infrastructures and investments on board for fishery, to increase security and profitability;
- research on efficiency (fuel, selectivity), new technics and methods);
- investment for aquaculture to initiate production;
- compensation of costs related to remoteness;
- knowledge on resources;
- education and training;
- increase collaboration between countries on illegal fishing;
- data collection systems.

These issues are notably covered by the EMFF operational programme. However, EMFF is not yet implemented in French Guiana while this study is performed.

Investment support for **new vessels** is identified as a need for the fishery sector. However, this is not covered by EMFF.

Illegal fishing by third countries is an important issue but is not covered by any strategy.

For aquaculture sector, the regional strategy identifies the potential for the development of aquaculture in French Guiana.

The specific issue related to the costs related to remoteness are taken into account to larger extent in the EMFF compared to the EFF.

The implementation of a regional strategy and the use of public funding by potential beneficiaries is limited by the importance of SMEs in fishery and aquaculture sectors (administrative burden related to EU funds is high for these companies). Thus, a specific emphasis should be given to technical assistance for the implementation of projects and the support of applications.

Figure 5 — Logical diagram for coastal tourism



The **improvement of infrastructure**, the organisation of the sector, the marketing are important issues for tourism in French Guiana. It is covered by the regional strategy for tourism.

The different axis for this strategy are:

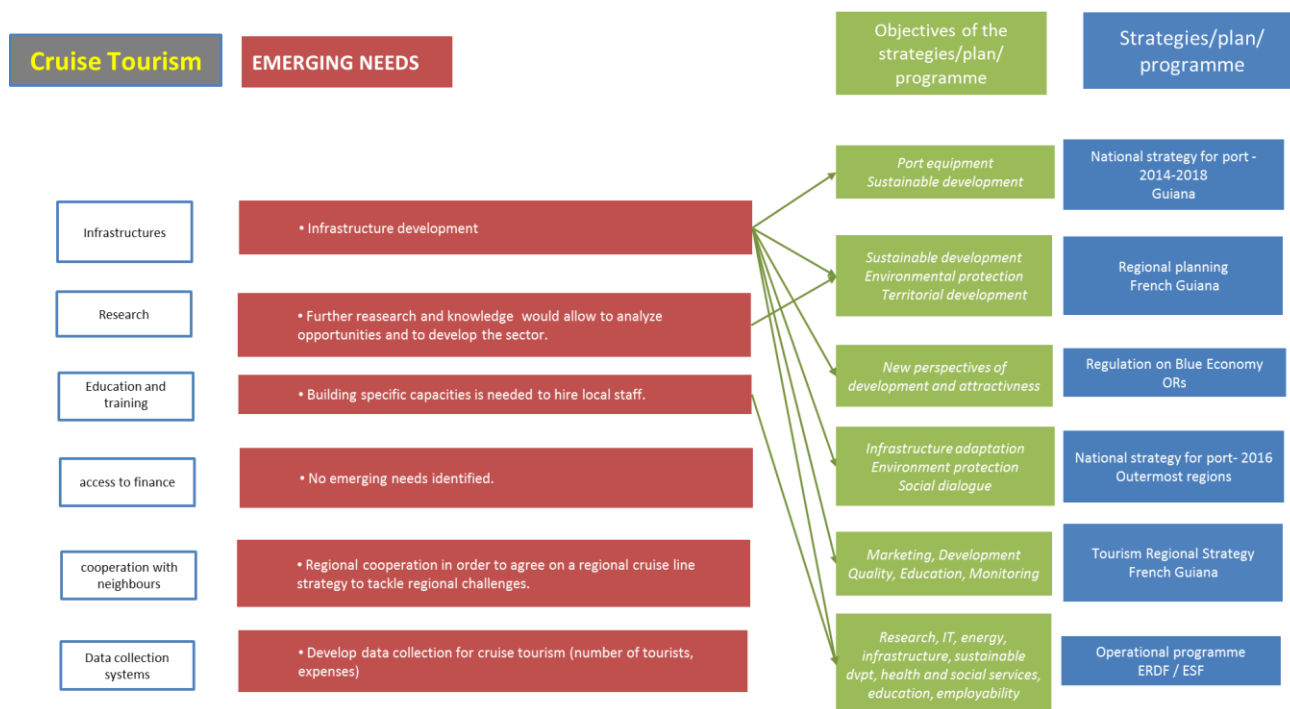
- development plan to provide services with the 'basics' of the destination;
- improve the image of French Guiana;
- improve quality of service and support education;
- improve organisation to improve effectiveness.

Cooperation with other territories could be implemented on marketing issues (development of the image of the 'three Guiana'), to a certain extent only as these territories are also competitors.

The **research on tourism remains a gap** to further develop the sector, even if a Tourism observatory has been recently implemented.

A **regional observatory for tourism** has been recently implemented. This is a first step to develop a strategy for tourism based on a quantitative diagnosis of the sector.

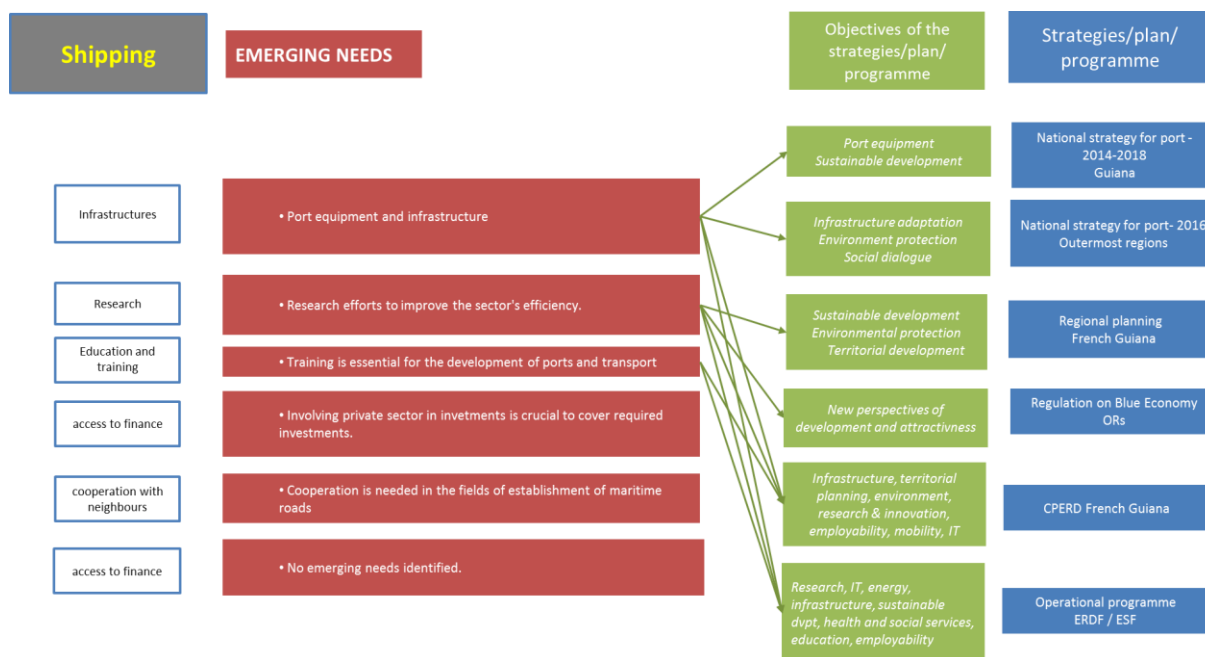
Figure 6 — Logical diagram for cruise tourism



Cruise tourism is limited in French Guiana. The sector is covered by the regional strategy for tourism, the main challenges being the development of infrastructure to welcome cruise vessels and cruise tourists and the improvement of the French Guiana image. The **development of a data collection system** on cruise tourism (in the context of the regional observatory on tourism, recently implemented for instance) would support the development.

A specific group working group has been established to develop cruise tourism in French Guiana.

Figure 7 — Logical diagram for shipping

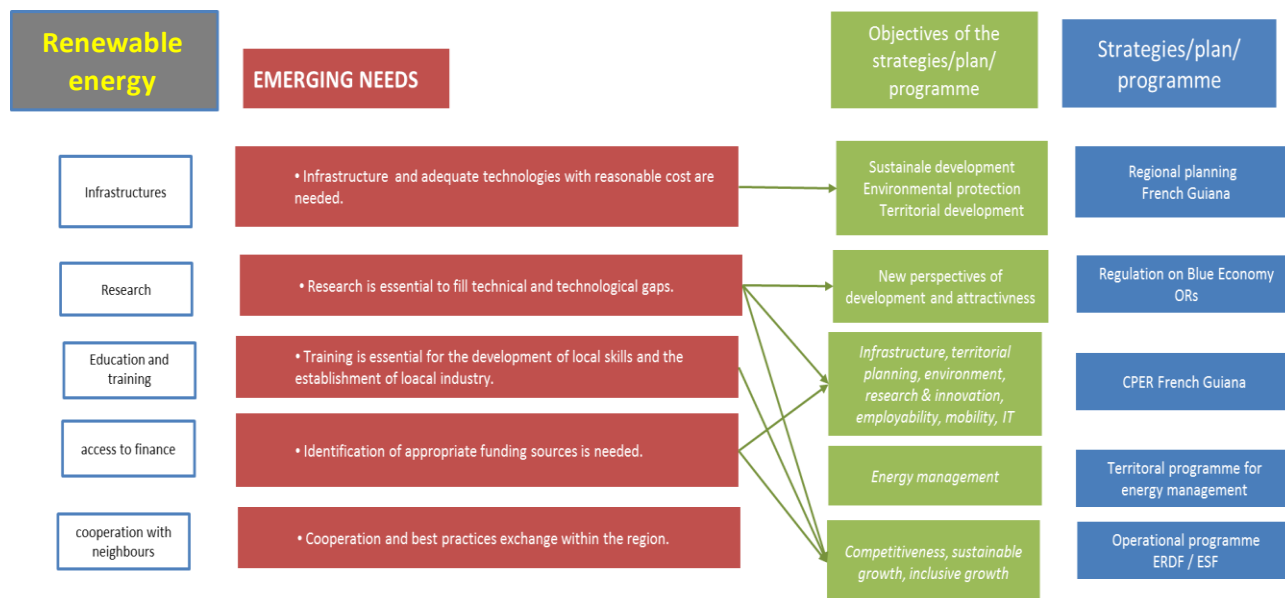


Modernisation and development of the infrastructure is a key issue for shipping. Several strategies and programmes, mainstreamed by the French Guiana maritime port

strategy — 2014-2018, cover shipping. Several sources of funding are available, notably EU funds (ERDF, ESF, CPER).

A strategy for shipping is under development by CARICOM. However, French Guiana is not member of CARICOM.

Figure 8 — Logical diagram for renewable energy



Energy production and consumption is of high interest in French Guiana, with increasing needs for energy (notably due to the population increase). A large share of energy production in French Guiana is renewable (hydraulic energy), however marine renewable energy is not developed. The territorial programme for energy management (SRCAE, 2012) states that marine energy potential should be furthered analysed).

A study should be launched in order to assess the feasibility to produce energy thanks to maritime streams. The first steps are to analyse the technical potential to produce marine energy, the following steps will consist in research and development and assessment of cost of energy production.

Several sources of funding could be available if the results from this study are positive (EU and national funds, private funds).

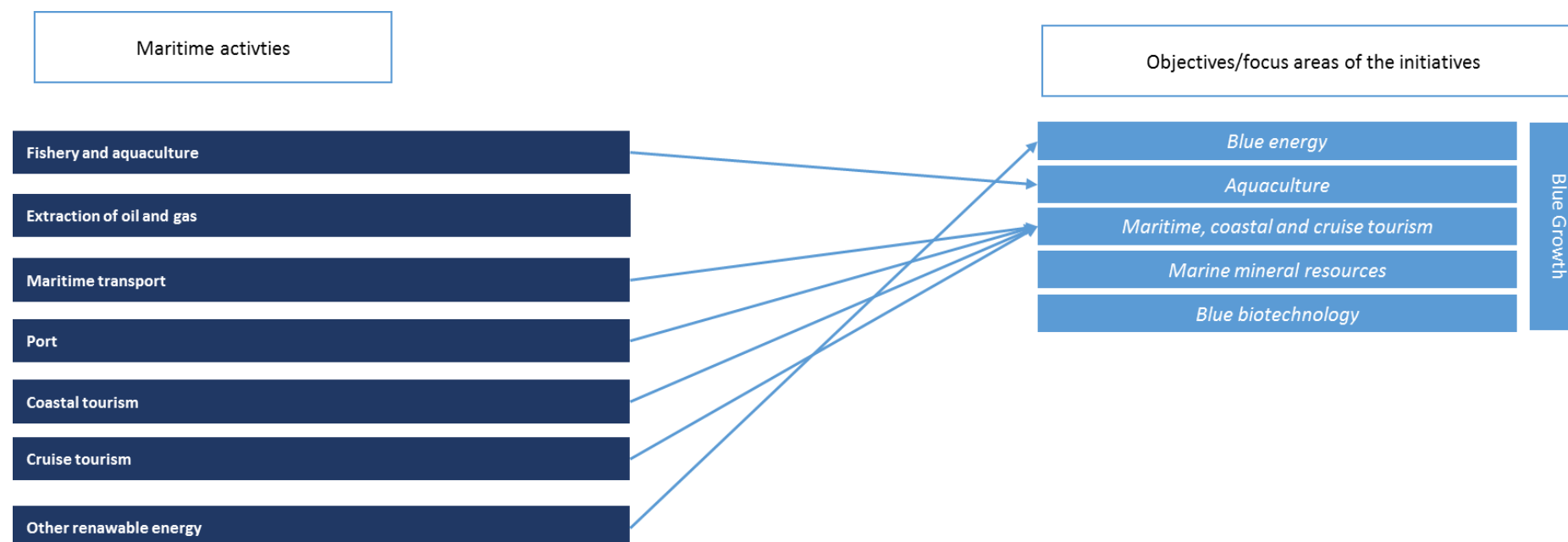
12. ORs potential contribution to IMP and BG initiatives

Blue Growth

There is a strong contribution of maritime activities in French Guiana to Blue Growth, notably tourism (cruise, coastal) and aquaculture. There is no aquaculture production at present in French Guiana, and this activity is at pre-development stage.

The only focus area not covered in the OR being 'marine mineral resources' and 'Blue biotechnology'.

Figure 9 — Logical diagram between maritime activities and Blue Growth objectives

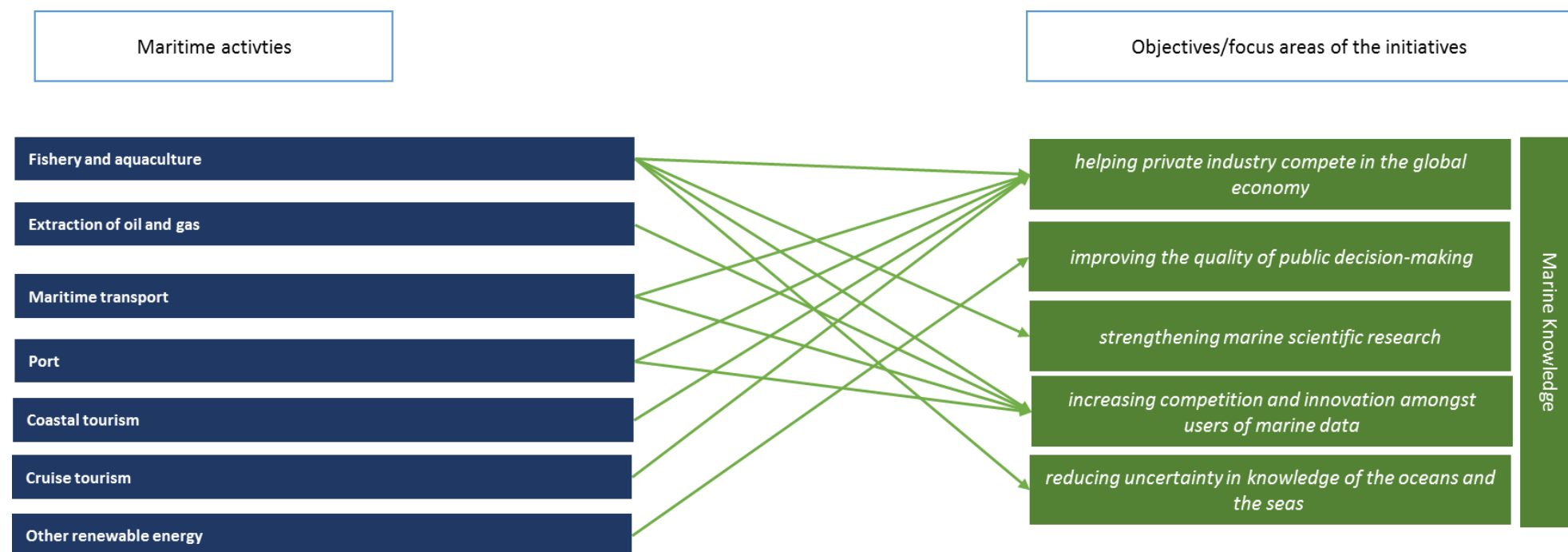


Marine knowledge

Most of maritime activities in French Guiana contribute to marine knowledge, they notably support the industry in the global competition. Indeed, most of the activities in French Guiana are on international market: tourism (coastal, cruise), maritime transport and fishery (competition with imported products).

Fishery and extraction of oil and gas (exploring phase) are related to marine scientific researches, through the assessment of fish resources and the knowledge on seabed.

Figure 10 — Logical diagram between maritime activities and marine knowledge objectives

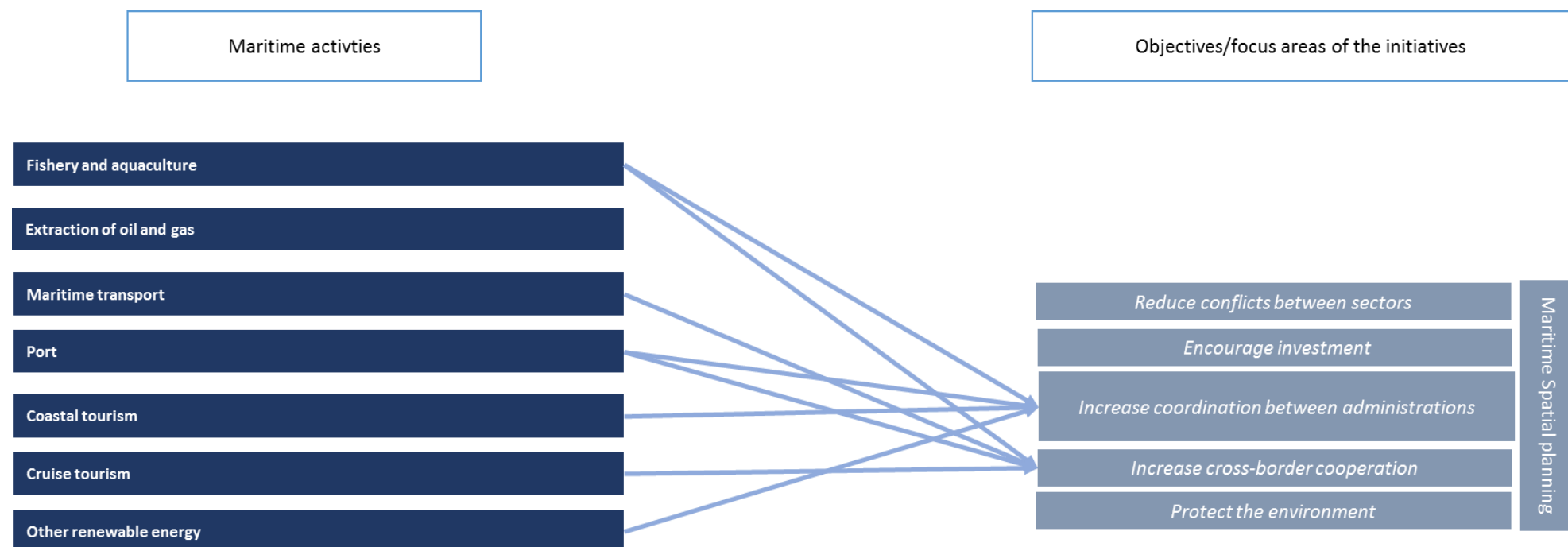


Maritime spatial planning

The contribution of maritime activities in French Guiana in relation to maritime spatial planning are related to both:

- the increased coordination between administrations, related to cross-cutting issues of maritime activities (maritime, environmental and economic development);
- increase cross-border cooperation: management of fish resources, international transport and cruise tourism (operated by international companies, with stops in different countries).

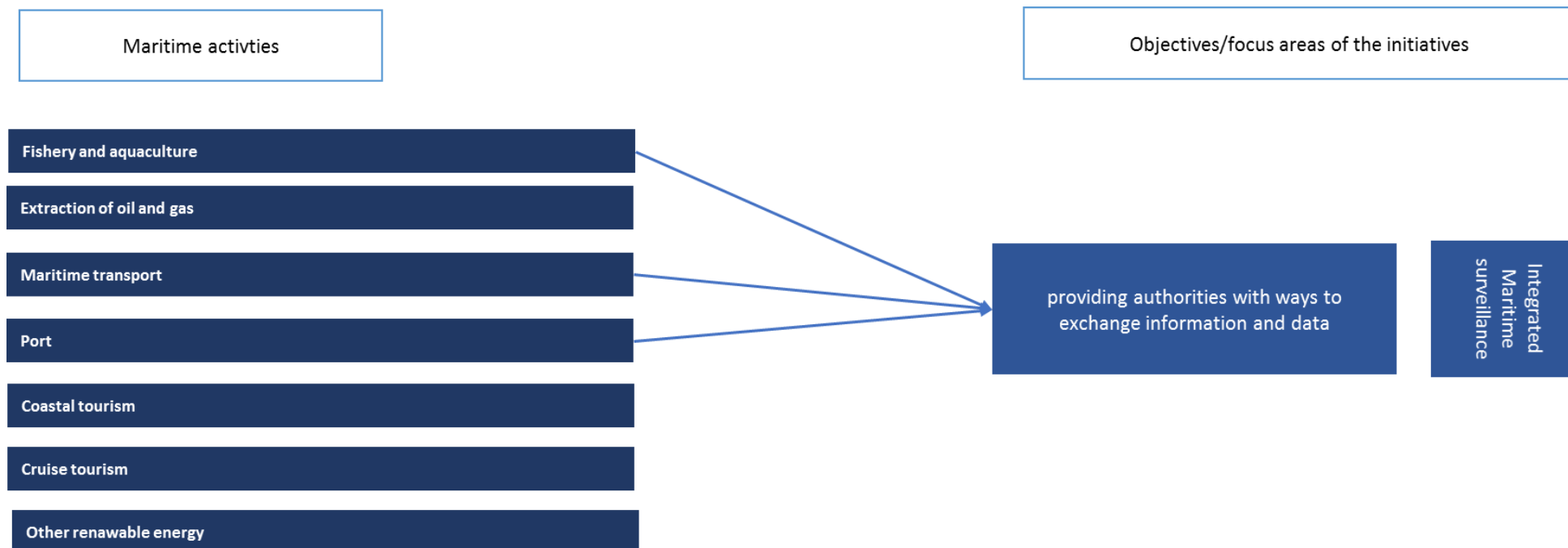
Figure 11 — Logical diagram between maritime activities and maritime spatial planning objectives



Integrated maritime surveillance

Three activities in French Guiana contribute to integrated maritime surveillance: fishery and aquaculture, maritime transport and port.

Figure 12 — Logical diagram between maritime activities and integrated maritime surveillance objectives



Maritime security strategy

Extraction of oil and gas contributes to risk management, notably for management of oil spill.

Figure 13 — Logical diagram between maritime activities and maritime security strategy objectives



13. Conclusions on concrete measures by type and timeframe

By analysing the Logical diagrams above, and considering all findings reported in the previous sections of the report, the following 'legislative', 'non-legislative' and 'financial' conclusions emerged. For each of them, the following details are provided:

- possible time frame for fulfilling the potential (short/medium term or long term);
- stakeholders that should activate the measure;
- possible best practices experimented in other territories (i.e. cross-fertilisation possibilities);
- measures for achieving/implementing them.

• **Fishery and aquaculture**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
LEGISLATIVE	Reinforcing the legal framework to combat Illegal, Unreported and Unregulated (IUU) fishing The illegal activity in the fishery sector is significant in French Guiana's waters. Based on interviews, this mainly comes from fishermen from third countries (Brazil).	Long term	National authority ; Local authority.	Implementation of measures to prevent IUU fishing.	Dialogue with Brazilian authorities to implement measures to prevent IUU fishing.
	Reinforcing regional cooperation Cooperation is needed for improving the management of shared resources and for organising regional markets.	Medium to long term action	All public actors and private stakeholders (professional organisations).	Regional cooperation in the context of CRFM, CARICOM.	Political commitment: further cooperation within the Caribbean region. Share of data and expertise.
NON-LEGISLATIVE	Develop knowledge on marine resources at sea basin level There is a strong need to reinforce knowledge on fish resources and to improve monitoring on catches, to be able to promote a sustainable management of the resource at sea-basin level.	Medium to long term	Central and local administrations in collaboration with research institutes.	Regional cooperation in the context of CRFM, CARICOM.	<ul style="list-style-type: none"> • Reinforcing research capacities. • Developing a continuous monitoring of stocks and catches. • Developing technical support and knowledge transfer to fishermen.

Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
<p>Development of a pilot projects for new fisheries</p> <p>All possible stocks are not targeted in French Guiana and the present small-scale segment face important challenges: stagnation of the fish price, underinvestment and low diversification.</p> <p>There would be a strong interest to develop pilot projects to identify new fishing technics, viable for fishermen and sustainable for the environment.</p>	Medium to long term	Local authority Professional organisations Fishermen		<ul style="list-style-type: none"> • Identification of potential projects with stakeholders: species targeted, fleet segment, fishing technics, etc. • Development of pilot projects. • Identification of funding sources.
<p>Increase level of education fishermen</p> <p>The level of education of fishermen is a key issue in French Guiana: 93,6 % of people involved in the fishery have no education level or just a primary school level.</p> <p>There is a strong need to develop educational schemes to increase involvement of small-scale fishermen: reduction of administrative burden to get subsidies for participation of fishermen, communication on the training sessions, adaptation of the educational scheme to fishermen needs and constraints.</p> <p>This must be implemented in close relation with private stakeholders in order to match with fishermen needs.</p> <p>An improvement of skills is important on several issues: fishing methods, sustainability, security, quality, communication (for direct sales and pesca-tourism)</p>	Short to medium term	Regional authority Local authorities Training center Professional organisations Fishermen.	/	<ul style="list-style-type: none"> • Identification of the barriers for involvement of fishermen in training sessions. • Identification fishermen needs in collaboration with private stakeholders. • Working group to adapt training sessions to fishermen needs and constraints. • Awareness campaigns on the Blue Growth careers.

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
	Public-private consultation should be launched for exploring the possibility of tackling fleet renewal As emerged in the study, the fleets operating in each of the EU ORs is aged and need to be renewed. Since the fleet renewal is not encompassed by the CFP regulation, a public-private consultation should be launched for identifying possible actions and sources of funds for renewing the fleet. Possible actions to be undertaken are: <ul style="list-style-type: none"> • Inventorying of the fleet currently needing renewal, in order to 'quantify' the type of investment needed, • Launch of the consultation for exploring possible synergies for funding/sustaining the renewal. The consultation is a short/medium term action and should be activated by local administration, envisaging the involvement of EU and national administration, as well as all related stakeholders.	Short to medium term action	European Commission National Authority Regional Authority Professional organisations Private stakeholders	/	Public-private consultation
	Modernisation of the fleet The fleet needs to be modernised in order to improve its efficiency and reach higher security standards.	Short to medium term action	National Authority Regional Authority Professional organisations Private stakeholders	/	<ul style="list-style-type: none"> • Set up priorities for the modernisation by identifying substantiated indicators for security and technology to modernize. • Identifying sources of funding.
FINANCIAL	Improve access to credit for project holders for both fisheries and aquaculture	Short to medium term	Public funding agencies	/	Guarantee systems should be developed to enable project holders to invest.

- **Extraction of oil and gas**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
LEGISLATIVE	No conclusion identified				
NON-LEGISLATIVE	Continuous assessment of interaction of oil extraction with other sectors and assessment of the impact on the environment Independent analysis showed that oil exploration has impact on marine resources (cetaceans, turtles, fish) and may also have an impact on other sector (fish, maritime transport). These impacts shall be continuously analysed and monitored in case of further exploration and exploitation of oil resources.	Short / long terms	National authorities Local	Impact assessment	Assessment and monitoring of the potential impacts of oil exploration and extraction on environment and other sectors.
FINANCIAL	No conclusion identified				

- **Coastal tourism**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
LEGISLATIVE	No legislative measure identified				

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
NON-LEGISLATIVE	<p>Implement a working group to implement recommendations made by experts from National Authorities on the attractiveness of marinas in Outermost Regions.</p> <p>These recommendations notably include:</p> <ul style="list-style-type: none"> • creation of committee for nautical tourism and marinas in each OR basin for the coherence of projects and to propose, to the Maritime Council, a strategic plan for the development of nautical tourism; • implement VAT exemption for yachts rented; • promote the inward-processing regime for companies involved in maintenance and ship repairs; • implementation of action to ease the de-tax procedures for retailers and consumers; • implementation of duty free zones for cruise tourists; • implementation of a strategy for maritime public domain management; • evolution of the rules for leisure boats which get passengers on board; • evolution of the rules on visas for tourists; • harmonisation of the dock dues rates among ORs; • implementation of factsheets for visitors; • elaboration of a websites with information and services. <p>Report : « <i>Le renforcement de l'attractivité et de la compétitivité des ports de plaisance des régions et départements d'Outre-mer</i> », Antoine Pichon, CGEDD ; Yves Duruflé, IGA ; Jacques Paultre de Lamotte, Guy Corréa, CGEFi — October 2016 http://www.cgedd.developpement-durable.gouv.fr/IMG/pdf/010675-01_rapport_cle281d15.pdf</p>	Medium to long term	National authorities Local authorities Professional organisations	Implementation of an action plan	<p>Implementation of and steering group in charge of:</p> <ul style="list-style-type: none"> • the definition of an action plan based on the recommendations; • to monitor the implementation of the recommendations.

Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
<p>Support the implementation of the regional strategy on tourism A regional strategy for tourism has been defined in 2013 and is led by the Comité Régional du Tourisme. This strategy must be effectively implemented and monitored for the development of the sector.</p>	Medium to long term	Comité Régional du Tourisme Stakeholders of tourism sector	Implementation of an action plan	<ul style="list-style-type: none"> • Implementation of the strategy; • Monitoring of the implementation.
<p>Creation of training courses and long-term training in coastal tourism The lack of skilled workers in the industry at all levels is a weakness. Human resources with low qualification are often employed in the tourism sector, especially in restaurants and accommodation activities. Considering that coastal tourism is a large employer in the OR economy, adequate training of personnel is needed for achieving the growth potential of this activity.</p> <p>Different levels of training seem necessary:</p> <ul style="list-style-type: none"> • specific training sessions for public and private stakeholders to exchange best practices. • training / educational programmes for stakeholders and staffs involved in the industry on communication, language, use of technology, management, etc. <p>On a longer term, these educational programmes would contribute to:</p> <ul style="list-style-type: none"> • spread tourism understanding among local communities; • mitigate the negative effects of tourism; • create frameworks contributing to the development of small management enterprises. <p>While developing this activity, it is also important to collaborate with neighbours to exchange best practices in this specific field.</p>	Medium to long term	Regional authorities Professional organisations Private stakeholders	/	<ul style="list-style-type: none"> • As a first step, needs for training should be identified. This issue should be treated in collaboration with the industry, for instance through a survey to all the tourism stakeholders; • Based on results of this consultation, a strategy for training should be elaborated, adapting it to the sector needs (long-term training or punctual sessions); • In addition, awareness campaign should be developed to promote careers in the tourism sector.

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
	Improvement of cooperation with other territories French Guiana face common challenge with other territories in the sea-basin. These different territories are competitors on the tourism market but cooperation on specific topics may be positive for all stakeholders: <ul style="list-style-type: none"> • share of experience; • improvement of the image/notoriety of the sea-basin. 	Medium / long term	Local authority Comité Régional du Tourisme Stakeholders of tourism sector	Cooperation projects CARICOM	<ul style="list-style-type: none"> • Identification of territories with similar issues/projects; • Setting-up of network for collaboration, share of experience, etc.
FINANCIAL	Support improvement of the accommodation sector There is a lack of investment in the accommodation sector in French Guiana.	Short/medium term	National authority Local authority Private stakeholders		Investments are needed to support the sector. Public support and foreign investment could offer an opportunity for the development of the sector.

• **Cruise tourism**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
LEGISLATIVE	No legislative conclusion identified.				

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
NON-LEGISLATIVE	Increase cooperation between the territories to attract cruising companies and better connect cruise tourism and coastal tourism French Guiana face common challenge with other Amazonian territories on the cruise sector. These different territories are competitors but cooperation they could all benefit of a promotion of the Guianas (Guiana, Suriname, French Guiana).	Medium to long term	Local authority Comité Régional du Tourisme Stakeholders from tourism sector.	Cruise dialogue in Baltic Sea and Mediterranean area	<ul style="list-style-type: none"> • Identification of territories with similar issues/projects; • Setting-up of network for collaboration, share of experience, dialogue, etc.
	Development of local small cruise paths Identification of possible small local cruise paths close to the coast or in the Amazonian rivers could represent an important activity to be exploited in the future and create new jobs and opportunities for the local economy.	Medium to long term	Local authorities and private stakeholders (also foreign investors)	Micro-cruises have been successfully experimented in many locations worldwide and could be undertaken with different types of ships	<ul style="list-style-type: none"> • Identification of possible investors interesting in such a type of cruise. • Adequate promotion also through institutional channels.
FINANCIAL	No financial conclusion identified.				

• **Shipping**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
LEGISLATIVE	No legislative conclusion identified				
NON-LEGISLATIVE	Promote the synergies between the sectors There is a high level of synergies between port infrastructure and maritime transport. These synergies play a role in the attractiveness of French Guiana at sea-basin level. These synergies should be further developed in order to maintain / develop this attractiveness.	Medium to long term	Local authority Grand Port Maritime de Guyane Stakeholders involved in the sectors	Development of clusters	<ul style="list-style-type: none"> Detailed identification of the synergies: skills, infrastructure, research; Promote an adapted governance covering all sectors. Develop actions to foster the synergies.
	Increase cooperation between the territories to face similar issues French Guiana face common challenge with other Caribbean territories and ORs: international competition, recruitment for specific positions, etc. These different territories would benefit of increase cooperation and experience sharing.	Medium to long term	Local authority Grand Port Maritime de Martinique Stakeholders involved in the sectors	Cross-border / cross territories planning	<ul style="list-style-type: none"> Identification of territories with similar issues/projects. Setting-up of network for collaboration, share of experience, implement common projects, etc.
FINANCIAL	No financial conclusion identified				

• **Renewable energy**

	Conclusion	Time frame	Stakeholders that should activate the measure	Possible best practice/flagship project	Measures for achieving them
NON-LEGISLATIVE	Support feasibility study This sector is at pre-development stage. The local authority (Collectivité Territoriale de Guyane) is considering the possibility to support a study to analyse maritime streams and to assess the potential of hydrokinetic power.	Medium to long term	Regional authorities Research institutes Private stakeholders	Development of renewable energy in other territories.	<ul style="list-style-type: none"> Feasibility study on the different renewable energies to develop in French Guiana. Technical and economic feasibility of the projects.
	Strengthen cooperation with regional organisations	Long term	Central administrations	The Capacity Building Programme on Renewable Energy (in the framework of the regional project Observatory for renewable energy in Latin America and the Caribbean) is a training programme that provided professionals and policy makers with deep and an update knowledge on energy technologies. The objective was to boost investments on renewable energy within the region.	Cooperation with regional organisation (United Nations Industrial Development Organization for instance) on capacity building and knowledge exchange in the field of renewable energy and energy efficiency.

14. Potential projects for the Atlantic Assistance Mechanism

Atlantic assistance Mechanism priorities	Maritime activities	Possible project
Promote entrepreneurship and innovation	All sectors	Training on entrepreneurship. Promote innovative projects with different types of stakeholders (academics, companies, public bodies), sharing, cross-fertilisation as implemented through European Innovation Partnerships.
	All sectors	Promote trans-regional training schemes: collective implementation in different territories.
	All sectors	Share good practices on: <ul style="list-style-type: none"> • development of sustainable tourism; • relation between cruise tourism, coastal tourism and yachting.
	Tourism	
	Fishery and aquaculture	Develop pilot projects (in collaboration with other territories) to identify new production methods.
Protect, secure and develop the potential of the Atlantic marine and coastal environment	All sectors	Share good practices regarding environment management.
Improve accessibility and connectivity	Coastal tourism Maritime transport Port	Promote cooperation and interconnectivity air / sea between territories.
Create a socially inclusive and sustainable model of regional development	Fishery and aquaculture	Promote fishery & aquaculture sector as composed of large number of small companies.
	Fishery and aquaculture	Support the application to EU funds for small-scale fishermen.
	All sectors	Re-enforcement of training & education for specific skills needed for maritime activities to hire local population: <ul style="list-style-type: none"> • Identification of specific skills required in maritime activities; • cooperation between Caribbean territories to implement educational schemes and reach critical size (number of trainees); • Promote mobility between territories for educational issues.

Roles and contributions to external initiatives

- ***Transatlantic Ocean Research Alliance***

Research on fish resource and blue biotechnology in Caribbean area contribute to Ocean Research Alliance through a better knowledge on resources and ecosystems.

- ***Ocean governance***

The potential contribution of French Guiana to Ocean governance is related to:

- cooperation in fishery (resources);
- cooperation on maritime transport (share of information).

- ***EU neighbourhood actions***

Several activities may play a role in EU neighbourhood cooperation:

- technology transfer in biotechnology and renewable energy;
- education & training on specific skills in maritime activities;
- cooperation on tourism to develop Caribbean image;
- exchanges of good practices;
- networking between stakeholders.

List of interviewees

Organisation	Maritime activities concerned	Number of interviewees
Direction de la Mer Guyane	Fishery and aquaculture	1
Collectivité Territoriale de Guyane	All activities	3
Direction de l'environnement, de l'Aménagement et du Logement (DEAL) de Guyane	Oil extraction, energy	1
IFREMER	Fishery & aquaculture	1
INSEE Guyane	All activities	1
Comité du Tourisme de Guyane	Coastal tourism, cruise tourism	1
Grand Port Maritime de Guyane	Port, shipping, cruise tourism	1
Port du LARIVOT	Port, fishery, shipping	1
Chambre de Commerce et d'Industrie de Guyane	All activities	2
CRPMEM	Fishery and aquaculture	2
Cluster Maritime de Guyane	All activities	1
Association Aquacole de Guyane	Aquaculture	2

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