

Satellite Account for the Sea – 2010-2013

Methodological Report



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Preface/Acknowledgments

The pilot project “Satellite Account for the Sea” described in this document results from a protocol between the following national organizations at the level of coordination and compilation:

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Directorate-General for Maritime Policy (DGMP)**

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AFEM – Association Business Forum of the Sea Economy

- AI Navais – *Associação das Indústrias Navais* (Portuguese shipbuilding association)
- AMAL – Algarve Inter-municipal Community
- ANQEP, I.P. - National Agency for Qualification and Vocational Education, IP
- APA – Portuguese Environment Agency
- APL – Administration of the Port of Lisbon
- APP – *Associação de Portos de Portugal* (Portuguese port authorities association)
- APSS – *Administração dos Portos de Setúbal e Sesimbra* (Setúbal and Sesimbra port authority)
- BBA – Bluebio Alliance
- CIMAC - Alentejo Central Inter-municipal Community
- CIM Aveiro – Aveiro Inter-municipal Community
- CIM Médio Tejo – Médio Tejo Inter-municipal Community
- CIM Oeste – Oeste Inter-municipal Community
- CIM Região de Coimbra – Coimbra Inter-municipal Community
- COTEC Portugal - National Business Association for Innovation
- DGAM - *Direção-Geral da Autoridade Marítima* (Portuguese maritime authority)
- DGEEC - Directorate-General for Education and Science Statistics
- DGEG - Directorate-General for Energy and Geology
- DGMR - Directorate-General for Natural Resources, Safety and Maritime Services
- DOCAPESCA – *Portos e Lotas, S.A* (Ports and fish markets)
- DRAM - Regional Directorate for Sea Affairs of the Government of the Azores
- DRAP Alentejo – *Direção-Regional de Agricultura e Pescas do Alentejo* (Regional directorate for agriculture and fisheries of Alentejo)
- DRAP Algarve - *Direção-Regional de Agricultura e Pescas do Algarve* (Regional directorate for agriculture and fisheries of Algarve)
- DRAP Centro - *Direção-Regional de Agricultura e Pescas do Centro* (Regional directorate for agriculture and fisheries of Centro)
- DRAP Lisboa e Vale do Tejo - *Direção-Regional de Agricultura e Pescas de Lisboa e Vale do Tejo* (Regional directorate for agriculture and fisheries of Lisboa e Vale do Tejo)
- DRAP Norte - *Direção-Regional de Agricultura e Pescas do Norte* (Regional directorate for agriculture and fisheries of Norte)
- DREM - Regional Statistical Office of Madeira
- DGRDN - *Direção-Geral de Recursos da Defesa Nacional* (Directorate-General for resources and national defence)
- DROTA - *Direção-Regional do Ordenamento do Território e Ambiente da Madeira* (Regional Directorate for the spatial planning and the environment of Madeira)
- ENMC - *Entidade Nacional para o Mercado de Combustíveis* (National authority for the oil market)

ENIDH – Nautical College Infante D. Henrique
FAP - *Força Aérea Portuguesa* (Portuguese air force)
FCT – *Fundação para a Ciência e a Tecnologia* (Portuguese science and technology authority)
FOR-MAR – Professional Training Centre for Fisheries and Sea
Fórum Oceano - *Associação da Economia do Mar* (Association of Maritime Economy created in 2015, from the merger of AFEM and Oceano XXI)
GNR - National Republican Guard
GPP - Office of Planning and Policy
ICNF – *Instituto da Conservação da Natureza e das Florestas* (Institute for the conservation of nature and forests)
IFAP – *Instituto de Financiamento da Agricultura e Pescas* (Institute of finance for agriculture and fisheries)
IGO - Gulbenkian Oceans Initiative
IMT – Institute for Mobility and Transport
INEM - National Medical Emergency Institute, IP
INPI - Portuguese Institute of Industrial Property
IPDJ –Portuguese Institute of Sport and Youth
ISP – Portuguese Insurance Institute
LIAM – *Linha de Investigação em Assuntos do Mar – Maria Scientia* (Maritime affairs research)
Lisbon Oceanarium
LISCONT – *Operadores de Contentores, S.A.* (Container operator)
LISNAVE – *Estaleiros Navais, S.A.* (Shipyard)
LNEC - National Civil Engineering Laboratory
LNEG – National Laboratory of Energy and Geology
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1. Introduction

The Satellite Account for the Sea (SAS) is a pilot-project that has been accomplished in May 2016, following a protocol signed by Statistics Portugal (INE) and the Directorate-General for Maritime Policy (DGMP), under the Ministry of Agriculture and Sea (MAS), in June 2013.

With this collaboration the statistical competences and the information available in Statistics Portugal could be allied to DGMP's knowledge of the sea agents' specificities, thus making possible the elaboration of this pioneer project.

In fact, this is the first SAS within the National Accounts (NA) framework in Portugal and in Europe. Regarding international examples of studies developed on this subject, apart from the Philippines case, no international references were found to statistical operations with the designation "Satellite Account for the Sea/Ocean".

Although there are a number of economic studies on the sea or ocean, elaborated by several national and international organizations or entities, including ocean clusters and ocean value chain's studies, their methodological analysis is diverse, so there is no possibility for a direct comparison between reports.

Satellite Accounts are extensions of the central system of accounts, with additional information. They intend to increase the capacity of observation of particular phenomena, constituting extensions in greater detail of NA, which are the economic overview statistics, par excellence.

In this context, the drawing up of a SAS was considered the most appropriate instrument to estimate the dimension and the importance of the sea/ocean economy in the whole economy, as well as to provide information on the production structure of the economic activities related to the sea. The spreading of the methodology would have the advantage of allowing the comparison among countries, within the international central system of accounts.

The SAS, in its compilation process, used:

- The principles underlying the NA, such as the activities, classifications, criterion of residence and accounting rules;
- The experiences from other studies (national and international), that are considered good practices;
- The experience of other satellite accounts in several areas (e.g. tourism, health, culture and sports satellite accounts).

SAS' primary objectives are: i) to measure the relevance of the sea/ocean economy; ii) to support decision making regarding the coordination of public policies for the ocean; iii) to monitor the National Ocean Strategy 2013-2020 (NOS 2013-2020) in its economic component, giving support to the Inter-Ministerial Commission for Maritime Affairs (ICMA). It will also provide

reliable and adequate information for Portugal in the context of the Integrated Maritime Policy (IMP) and other processes where data for the Ocean Economy is decisive.

The aim of this methodological report is to provide detailed information on the process of building the SAS, namely the concepts, the nomenclature, the description of the general methodology regarding data compilation, the sources used and the assumptions made during that process.

It follows the presentation of several reports along the three years of the SAS building:

- A Feasibility Study in April 2014, which concluded on the project practicability, while acknowledging some limitations and difficulties of implementation, namely statistical information available and scarcity of human resources (internal report, PT);
- A draft report on the Conceptual definition of the Sea Economy for the SAS, disclosed in May 2014, that defines 9 groups of activities (http://www.dgpm.mam.gov.pt/Documents/CSM_Definição%20Economia%20do%20Mar_draft%2012maio2014-site.pdf);
- An Interim Report in June 2015, that delineates and characterizes a preliminary perimeter of the SAS universe of analysis, makes the inventory of the main Kind-of-Activity Units (KAU) and proceeds to their classification, according to the content defined during the preparation of the Feasibility Study (internal report, PT);
- An Assessment of national and international reports on the sea or ocean economy, released in June 2015 (http://www.dgpm.mam.gov.pt/Documents/Economia%20do%20Mar_Exemplos%20Internacionais_final.pdf);
- The Value Chain of the Sea, released in June 2015, that presents the preliminary details for the value chains of the several groups of activities, in appealing visual schemes, allowing a better understanding of the SAS universe (http://www.dgpm.mam.gov.pt/Documents/Economia%20do%20Mar_Cadeias%20de%20valor_final.pdf).

The fundamental methodological references of SAS were the manual of the European System of Accounts (ESA 2010), the proposal of a database for the Integrated Maritime Policy, made for the Statistical Office of the European Union (EUROSTAT), in 2009: Ifremer *et al*, Study in the field of maritime policy - Approach towards an Integrated Maritime Policy Database and the studies done and in progress since 2012, by the European Commission/DG MARE, on the Blue Growth.

Taking into account these references and the Portuguese reality, the following sea observation levels were defined:

- 1) Characteristic activities (those where an important part of operations are on the ocean or which products come or are intended to be used in the sea/ocean or in the coastal borders);
- 2) Crosscutting activities (support activities to the other activities assumed for the SAS, corresponding to maritime equipment and maritime services);
- 3) Activities favoured by the proximity of the sea (coastal tourism).

In addition, 9 groups of activities were determined, following a value chain rationale (Figure 1).

Figure 1 - The sea/ocean economy by group



The main uses and resources of the sea products were also analysed.

As a result of the efforts developed, around 60,000 KAU have been selected, targeted at the nine groups defined in the Feasibility Study, as well as at institutional sectors (perspective of National Accounts) within each grouping.

A Supply and Use Table for the Sea was built for the years 2010 to 2013, presenting results for the following variables at the national level, by groups and by institutional sector:

- Output;
- Intermediate Consumption;
- Gross Value Added;
- Gross Operating Surplus;
- Compensation of Employees;
- Other Subsidies on Production;
- Other Taxes on Production;
- Gross Fixed Capital Formation;
- Imports and Exports of Goods and Services;
- Final consumption expenditure (Households, Non-profit institutions Serving Households and Public Administration);

Additionally, estimates were also made for Employment (full time equivalent).

The main results were disclosed on June 3, 2016, and are available online:

1) Press Release

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaquas&DESTAQUESdest_boui=261968449&DESTAQUESmodo=2

2) Tables

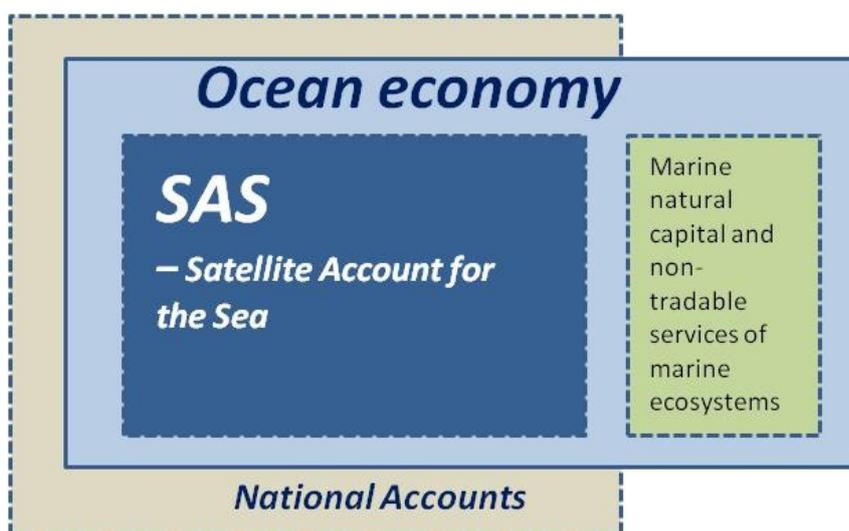
https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaquas&DESTAQUESdest_boui=261968449&DESTAQUESmodo=2

2. Definitions and scope

2.1. Sea/ocean conceptual definition

In the feasibility study, based on the strategic framework of the EU Integrated Maritime Policy and of the National Ocean Strategy 2013-2020, it was considered the following conceptual definition of ocean economy: "*Economic activities that take place at sea and others that are not taking place at sea but depend on it, including marine natural capital and non-tradable services of marine ecosystems*". However, marine natural capital and non-tradable services of marine ecosystems were not considered in the SAS, since they are not included in the production boundary of NA as defined in ESA 2010 (Figure 2).

Figure 2 - The ocean economy conceptual definition



The economic activities that take place at sea are, for example, maritime transport, fisheries and marine aquaculture, bioprospecting, research and exploration of non-living marine resources, marine tourism, marine equipment operation - namely Technologies communication and information Electronics (ICTE) maritime and submarine equipment - and services, such as marine information and communication services.

Among the economic activities that depend on the sea, but do not take place at sea, the following groups are distinguished:

- The activities that directly depend on the enjoyment of goods and services of marine ecosystems (e.g. coastal tourism);
- The activities that provide goods and/or specific services to the activities that take place at sea (e.g. ports and logistics, construction, maintenance and ship repair, ship

- dismantling, construction and marine equipment maintenance and maritime services on land);
- The activities belonging to certain functional chain values, which can hardly be separated, and that influence, directly, the activities that take place at sea. In this situation are the value chain centered on fish (e.g. aquaculture in inland waters, as it uses the same fish distribution channels), the shipping value chain focused on water vessel (e.g. transport on inland waterways, river cruises, where there is no differentiation in the production of vessels), and nautical tourism value chain (covering namely the maritime tourism companies operating in water).

The remaining activities, which do not operate or not depend on the sea, represent the rest of the economy.

The definition of Sea Economy takes into account the economic activities that use the sea, directly or indirectly, focusing on the value chain in which they operate, covering both activities that are located in the maritime area, as others located in coastal areas and also in remote areas of the coast, if related to the sea. In this context, the economic value of production and consumption of "maritime" goods and services will depend on the set of productive activities defined in the scope of this study, as activities related directly or indirectly to the sea. Activities that cannot be "measured" under the Portuguese System of National Accounts aggregates were not considered in the SAS context.

The activities or goods and services (products) related to the Sea Economy are fundamentally identified as those who meet, simultaneously, the following conditions:

- Activities and/or goods and services that, in the absence of the sea, would cease to exist in significant quantities, or their consumption would be significantly reduced;
- Existence of statistical information available, or which can be obtained.

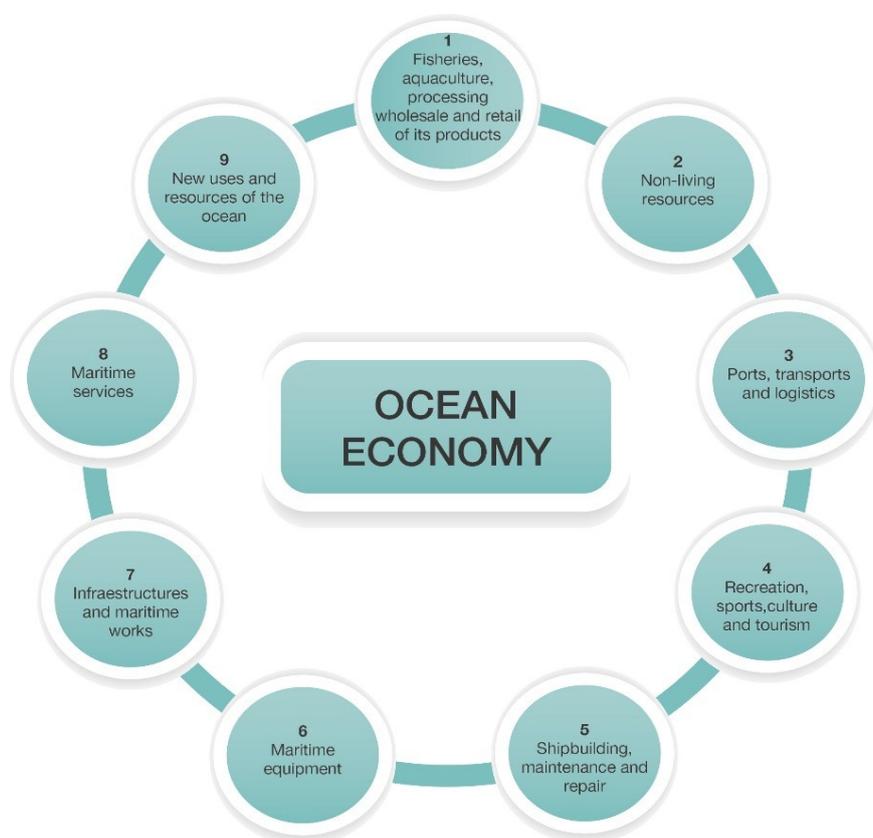
It is worth mentioning, once more, that the SAS construction is made within the Portuguese National Accounts (PNA) framework, where the main concepts involved in building a satellite account have their origin, in general, in the ESA 2010. Thus, the sea economy does not integrate the non-tradable services of marine ecosystems, as these are not included in the production boundary defined by ESA 2010. It is, therefore, more restricted than the one developed within the NOS 2013-2020.

The compilation of SAS started with the transposition of the maritime economy definition for statistical language, specifically the identification of activities and sea products in the official classifications in use. The delimitation and characterization of the reference population of the SAS, inventorying the KAU and proceeding to their classification, was conducted by Economic activity (Portuguese Classification of Economic Activities - CAE Rev. 3) and by groups of activities, according to a specific classification designed by Statistics Portugal and DGMP, supported by the NOS 2013-2020 and the IMP.

2.1.1. Scope by group

The scope of the Sea Economy, considered in the SAS, aggregates activities in two main areas: "Established Activities" and "Emerging activities" which, in turn, are divided into groups. It were considered nine groups, eight of which correspond to established activities (groups 1 to 8) and the last group 9 - New uses and resources of the ocean, which congregates emerging activities (Figure 3). The adopted criterion for the classification of economic activities as established or emerging obeyed the international logic of maturity level of the markets, namely what was followed in the EU, in the study "Blue Growth", for the purpose of international comparisons.

Figure 3 - Groups considered in SAS



It was adopted a value chain logic, taking into account, inter alia, the level of industry disaggregation permitted by the National Statistical System (NSS). Given this restriction, the methodological option was to consider Maritime and Marine Equipment Services as independent groups, containing cross economic activities to other groups (Table 1).

Table 1- Groups of economic activities for the ocean economy in SAS

Groups	Activities	
	That operate on the Ocean	That do not operate on the ocean but depend on it*
ESTABLISHED ACTIVITIES		
1. Fisheries, aquaculture, processing, wholesale and retail of its products	Sea fishing	Inland fishing
	Open sea aquaculture	Inland aquaculture (fresh water, brackish water and salt water in tanks or other structures inland)
	Processing industry	
	Processing of fishery and aquaculture products	
		Marketing of fishery and aquaculture products
2. Non-living marine resources	Prospection of marine mineral resources	Sea salt extraction and refining
	Prospection of conventional energy resources (oil and gas)	
	Exploitation of marine mineral resources	
	Operation of conventional energy resources	
	Water withdraw and desalination	
3. Ports, transports and logistics	Maritime freight transport	Inland freight transport
	Transport of passengers by ferry	
	Cruises	
	Ports and logistics	
	Boating (recreational and sport)	
4. Recreation, sports, culture and tourism	Cultural activities (eg heritage, shows, events related to the sea)	
		Coastal tourism (ex.: sun / beach)
		Imputed rents (second homes)
	Shipbuilding	
5. Shipbuilding, maintenance and repair	Naval maintenance and repair	
		Naval dismantling
	Machinery and marine equipment	
6. Maritime equipment**	Submarine cables and pipelines	
	Ocean Information Technology, Communication and Electronics (ICTE)	
	Maritime robotics	
	Other equipment (e.g. textiles, clothing, packaging, etc.)	
	Coastal defense works	
7. Infrastructures and maritime works	Port infrastructure	
	Education and R & D	
8. Maritime services**	Governance	
	Maritime information and communication services	
		Consulting and services to companies in the areas of the sea
		Financing and marine insurance
	Other services	
	Earth observation services	
EMERGING ACTIVITIES		
9. New uses and resources of the ocean	Marine biotechnology	
	Unconventional energy resources (gas hydrates)	
	Marine renewables	
	Gas storage	
Earth observation services		

Note:* Or other aquatic environment; ** Encompass transversal uses and activities to other groups.

Legend: Areas of Intervention

- Living resources
- Non-living resources
- Infrastructure, uses and industrial activities
- Infrastructure, uses and services activities
- Governance activities

Groups:

1 - Fisheries, aquaculture, processing, wholesale and retail of its products - includes activities related to the value chain of fishery and aquaculture products. The core activities include Fisheries and Aquaculture, with connections upstream to the food industries for animals, such as aquaculture, and downstream with the transformation industry, such as processing and preserving of fish, crustaceans and mollusks. It also includes the production of ice, cold storage and trade (wholesale and retail) of fishery and aquaculture products.

2 - Non-living marine resources - includes activities related to prospection and exploitation of conventional energy resources (oil and gas), with the prospection and exploitation of marine minerals and with the extraction and refining of salt and production of condiments derived from it. It also includes the withdraw and desalination of sea water.

3 - Ports, transports and logistics - includes activities related to the transportation by water and related value chain, whose main activity is the shipping of goods and passengers. Downstream includes port services and rental of maritime and inland waterway transports and the river and estuarine transport of goods and passengers.

4 - Recreation, sports, culture and tourism - includes the maritime activity of recreation and sport, the maritime dimension of culture and maritime and coastal tourism, including maritime touristic activities operating in water. This group includes the activities related to boating, which are considered recreational boating and nautical sports. Coastal tourism includes housing, imputed rents of second homes, real state promotion of tourist accommodation, restaurants, travel agencies and associated recreational activities and leisure, including the related cultural activities, like the activities considered in the Tourism Satellite Account (but only the ones taking place in coastal areas).

5 - Shipbuilding, maintenance and repair - comprises construction activities of ships and floating platforms, including pleasure and sport boats, as well as the repair and maintenance activities of boats and their dismantling at the end of life.

6 - Maritime equipment - comprises diverse manufacturing activities such as, for example, the ones allowing equipping a vessel or a floating platform. It is a heterogeneous group, dedicated primarily to building and repair of relevant equipment for the other activities of the sea economy. It was decided, therefore, to bring together in one group all the activities identified in the manufacturing industry with the production/repair of marine equipment of support for most of the activities of the other groups.

7 - Infrastructure and maritime works - includes activities related to construction works and expansion of port terminals in order to develop maritime and land accessibility conditions, namely land corridors for the transport of goods by rail (associated with shipping, by connecting the rail to the main interchanges of intermodal transport). It also includes the construction and repair of ports, marinas, as well as dredging, protection and coastal defence, etc.

8 - **Maritime services** - includes, as the name indicates, the service activities related to the sea. Includes education, training and R&D in areas related to the sea, governance activities, such as defence and maritime security and maritime spatial planning, and a large subgroup of other service activities encompassing maritime information and communication services, consulting and business services in the areas of the sea, maritime finance and insurance, trade and distribution activities related to the sea and others.

9 - **New uses and resources of the ocean** - this group was established in order to quantify a set of emerging activities, yet with little economic importance, which would, otherwise, be "diluted" in other activities. The relevance of this isolated group was evaluated during the work. Includes the marine biotechnology; marine renewable energies; gases storage; research and exploitation of unconventional energy resources (gas hydrates) and the services of earth observation.

2.1.2. Underlying value chain rationale

The proposed concept/definition for the SAS "sea economy" was based on desk research made at several levels:

- Statistics Portugal: Metadata; Transport Statistics, Fisheries Statistics, TSA, NA, etc.;
- Statistical services of other EU Member States (e.g. : Netherlands);
- International statistics institutions (Organization for Economic Cooperation and Development (OECD), EUROSTAT, EC/DGMARE);
- DGMP: NOS 2013-2020 and preparatory work;
- Other international institutions: several studies on the Sea Economy in several countries.

In this context, the Sea Economy aims to study the production and consumption of goods and services related to economic activities that use, directly and/or indirectly, the sea.

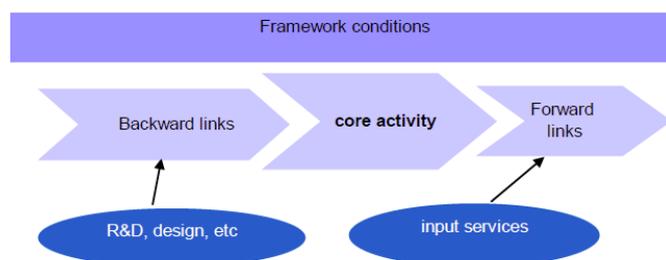
The most recent European public policies were also considered, notably the Europe 2020 strategy and respective Flagships, or the IMP and the Blue Growth¹. These policies generally adopt a value chain rationale, at the expense of a sectorial logic, analyzing, in an integrated manner, the potential of a smart, sustainable and inclusive development.

This value chain rationale has advantages, as focusing on selected functions (food/nutrition, energy, materials, transportation, health and well-being, safety,...), allows the evaluation of these functions across sectors that are part of the value chain and identifies where synergies and risks can occur. The generic example of a value chain analysis is presented in the Blue

¹ ECORYS *et al* (2012), Blue Growth Study - Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, August 2012 (Client: DGMARE)

Growth¹. The analysis also takes into account the context of conditions that provide the conditions for the development of maritime activities, and can be influenced by public policies (Figure 4).

Figure 4 - The value chain analysis in Blue Growth



Source: ECORYS *et al* (2012), Blue Growth Study - Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, August 2012 (Client: DG MARE), page 14

In the context of the SAS, the value chain rationale is a concept that was taken into consideration, since it allows to articulate the central activity (core) of the Sea Economy with the upstream activities (backward links) as well as with the downstream (forward links), detecting the synergies and risks and the influence of the framework or surrounding conditions through public policy proposals.

In a previous Statistics Portugal/DGMP report the SAS value chains by group were analyzed². Small updates were made and are incorporated in the present report, namely in what concerns the number and the designation of the functions considered (Table 2), that follows the criteria of the basic needs for the human-beings satisfaction and for the planet earth preservation.

Table 2 - Functions considered in SAS

Function	Group
Energy	2, 9
Environment	7, 8, 9
Health & well-being	1, 4, 9
Knowledge	8, 9
Materials & artefacts	2, 5, 6, 9
Nutrition	1, 2, 9
Regulation	8
Safety	6, 7, 8, 9
Services supply	3, 8
Transportation	3, 4, 7
Water	2

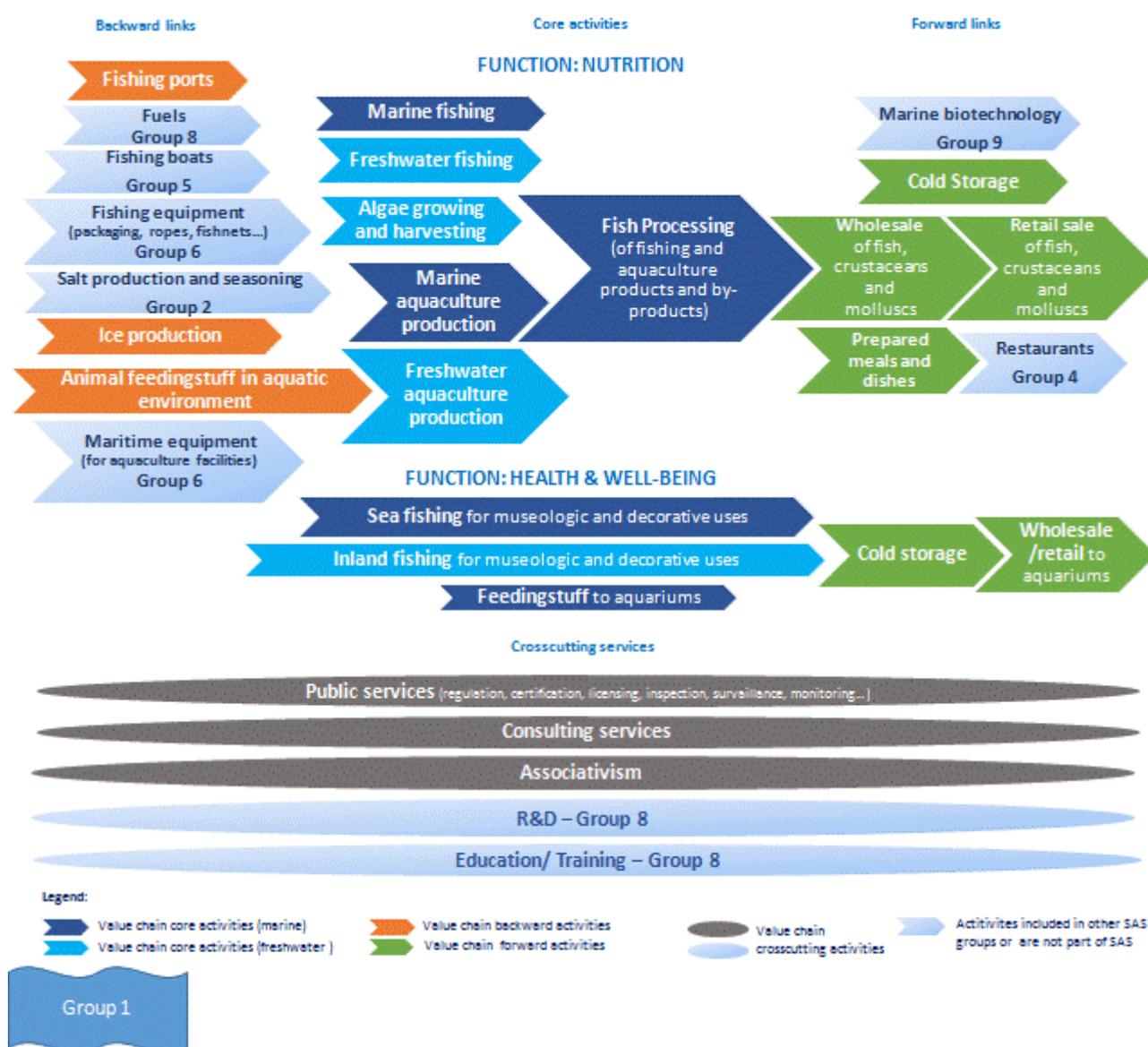
The value chains considered for the Groups 1 to 9 are detailed ahead.

² Statistics Portugal / DGMP (2015), Satellite Account for the Sea – Value Chains, June 2015 (http://www.dgpm.mam.gov.pt/Documents/Economia%20do%20Mar_Cadeias%20de%20valor_final.pdf)

2.1.2.1. Fisheries, aquaculture, processing, wholesale and retail of its products

The approach to the value chain concept covers the activities integrated in the value chain of fishery and aquaculture products, from the resource catching or production to their wholesale and retail. These are important activities to fulfill human race nutrition and health & well-being functions (Figure 5).

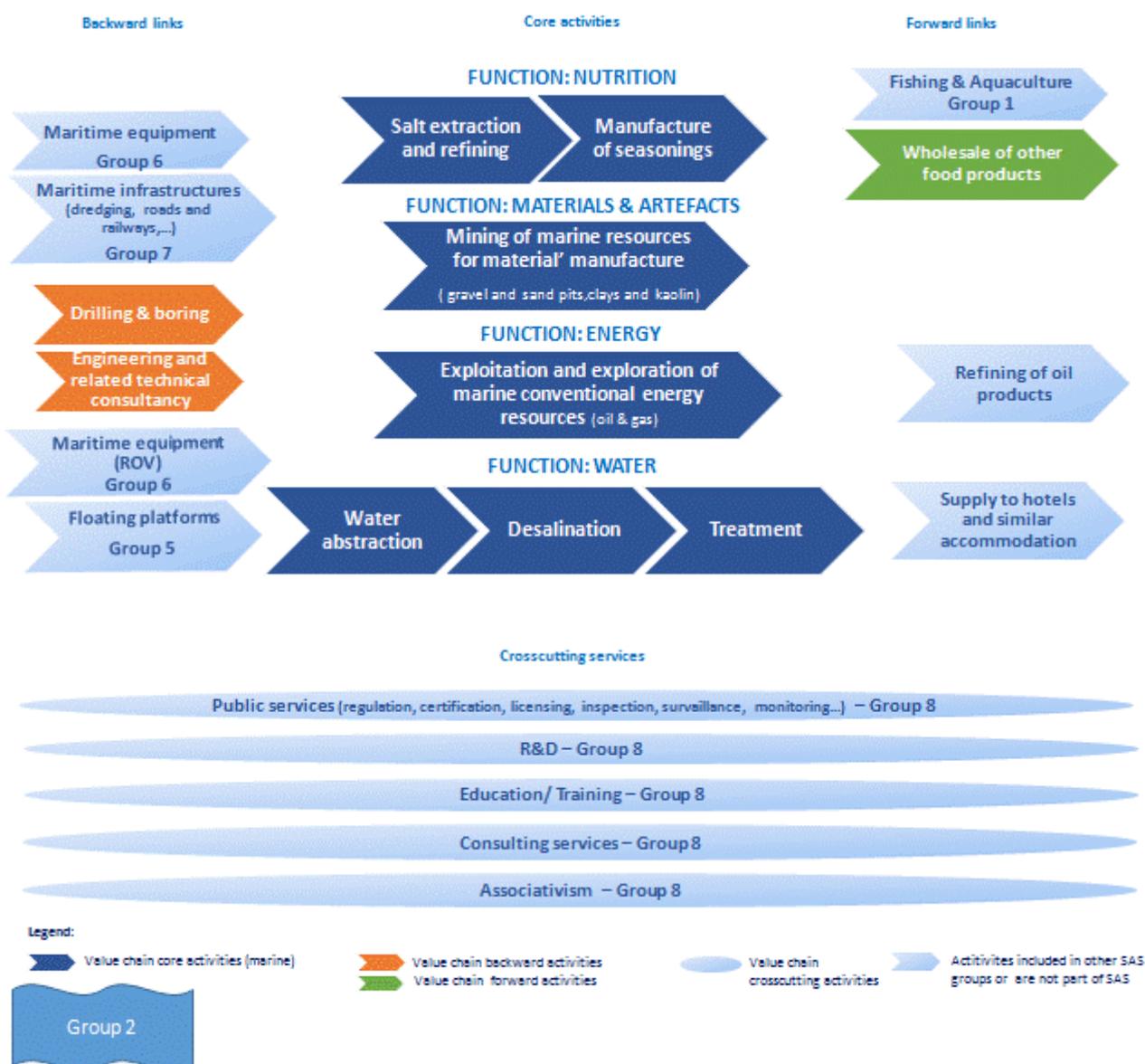
Figure 5 - SAS value chain for group 1 – Fisheries, aquaculture, processing, wholesale and retail of its products



2.1.2.2. Non-living marine resources

The value chain for this group includes activities related to the prospecting, exploration, development and production of conventional energy resources (oil and gas), mining of marine minerals and extraction and refining of salt and condiments/seasonings production thereof. It also includes the desalination of seawater. This group’s activities contribute to several functions: nutrition, energy, water and materials & artifacts (Figure 6).

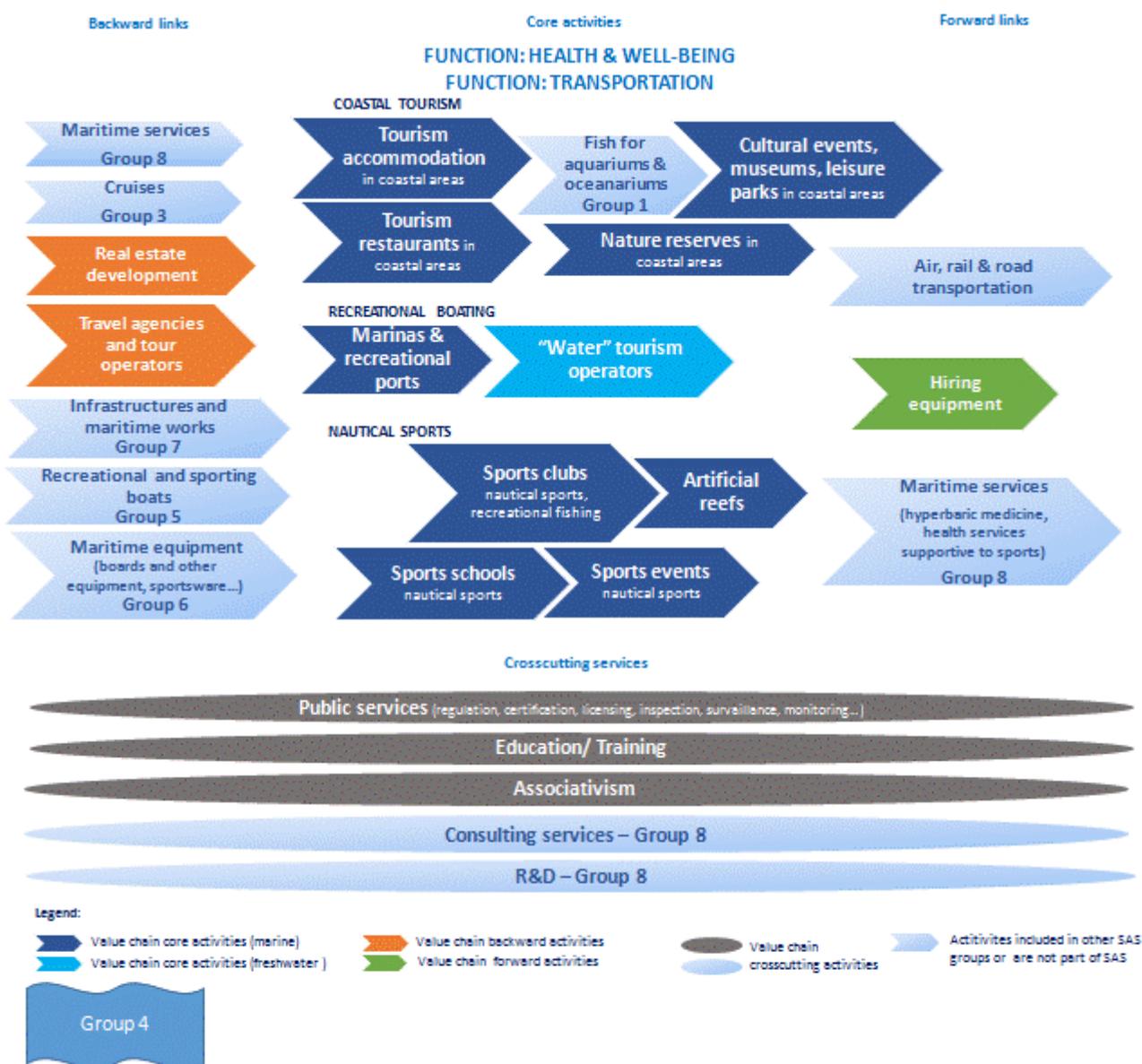
Figure 6 - SAS value chain for group 2 - Non-living resources



2.1.2.4. Recreation, sports, culture and tourism

This group’s value chain comprises the activities to boating, which are considered recreational boating and nautical sports, maritime culture and maritime and coastal tourism, including “water” touristic operators. Coastal tourism includes housing, property development of tourist accommodation, catering activities, travel agencies and recreational activities and leisure associates, including the related cultural activities, like the activities considered in the Tourism Satellite Account, only in coastal areas. The nautical sports schools and other entities that provide water sports training are included. These activities contribute to health & well-being, as well as to transportation functions (Figure 8).

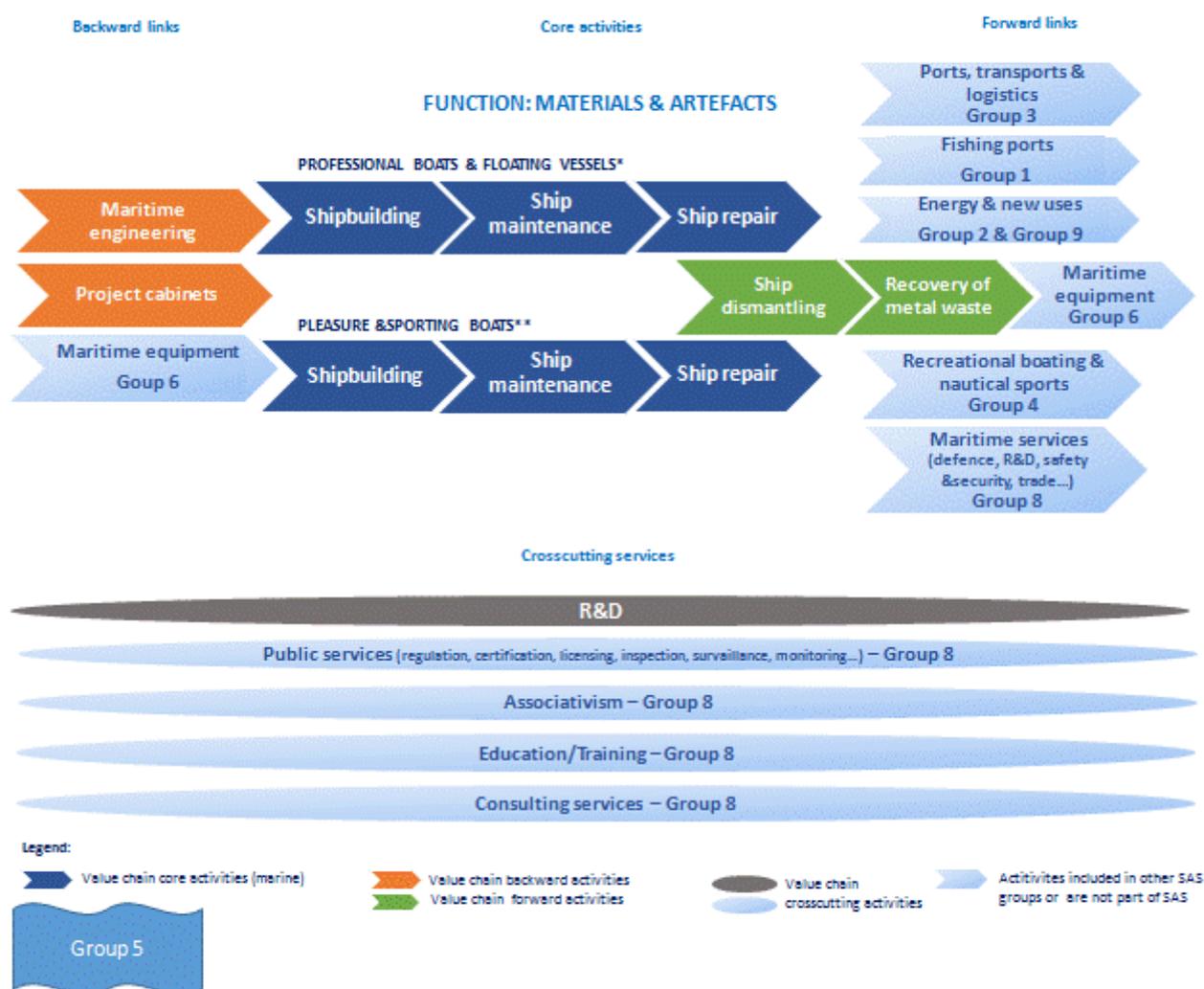
Figure 8 - SAS value chain for group 4 – Recreation, sports, culture and tourism



2.1.2.5. Shipbuilding, maintenance and repair

Group 5 comprises shipbuilding and related activities to manufacture ships and floating platforms, including pleasure and sporting boats, as well as the repair and maintenance activities of vessels and their dismantling at the end of their life. It contributes to materials & artifacts function (Figure 9).

Figure 9 - SAS value chain for group 5 - Shipbuilding, maintenance and repair



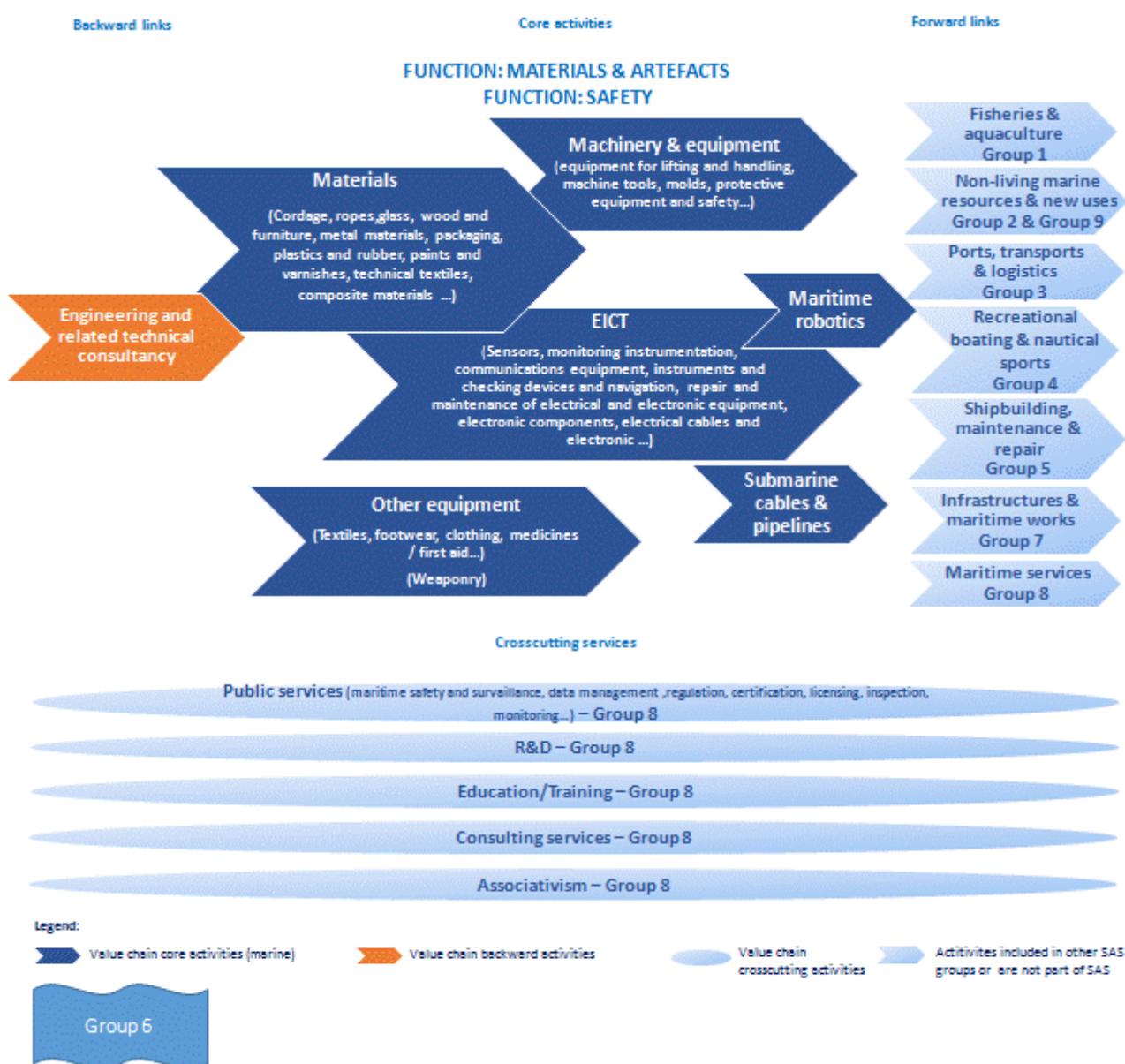
Notes: * Oil tankers, warships, bulk carriers, reefers, fishing, hovercrafts, ferries, dredgers, tugs, wooden boats, fiberglass or other non-metallic materials for commercial or industrial use, light-vessels, pilot boats, floating docks, pontoons, floating cranes, buoys, drilling rigs, etc ...

** Yachts and other pleasure and sporting boats, including fishing, made in any material, driven by motors, sails or oars (canoes, kayaks, water bikes, rafts and inflatable boats).

2.1.2.6. Maritime equipment

Marine equipment gathered, in one group, all activities identified in manufacturing (NACE Rev.2 /CAE Rev. 3 section C), such as the manufacture and repair of marine equipment, that support most of other SAS groups' activities. It also comprises some "Construction" activities (NACE Rev. 2/CAE Rev. 3 section F) identified as pursuing a maritime component, machinery and equipment trading activities, as well as specific engineering and training activities, associated with marine equipment domain. This group's activities contribute to materials & artifacts and safety functions (Figure 10).

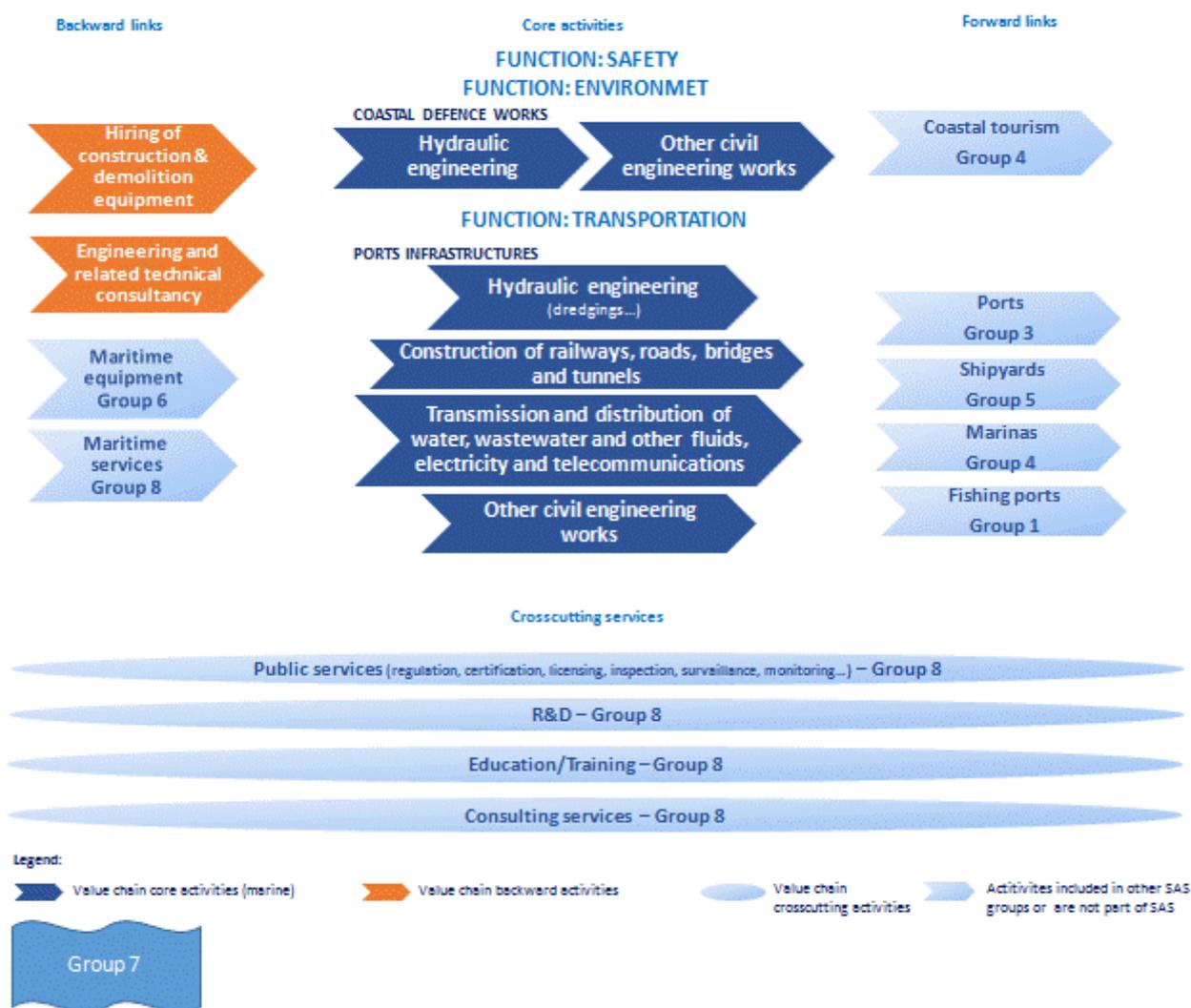
Figure 10 - SAS value chain for group 6 - Maritime equipment



2.1.2.7. Infrastructure and maritime works

Group 7 includes activities related to construction and expansion of port terminals, in order to develop maritime accessibility conditions, as well as terrestrial, including land corridors for the transport of goods, by rail, iron (associated with shipping, by connecting the road-rail to the main intermodal transport nodes) and infrastructure suitable for receiving cruise ships and recreational boating. It also includes the construction and repair of ports, marinas, as well as dredging, protection and defence of the coastal zone and other maritime and port works, for example, infrastructure related to security systems. These activities are relevant to fulfill transportation, safety and environment functions (Figure 11).

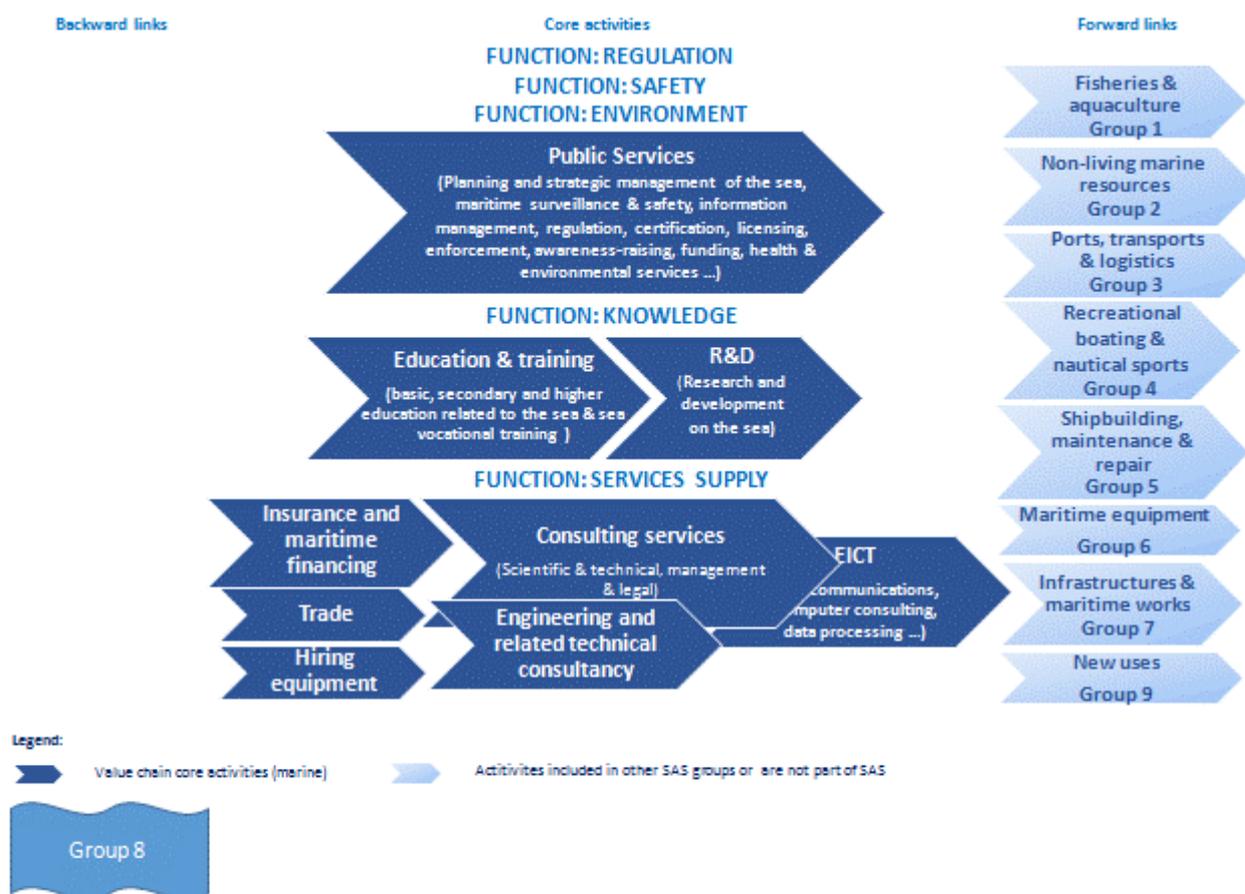
Figure 11 - SAS value chain for group 7 - Infrastructures and maritime works



2.1.2.8. Maritime services

Group 8, Maritime Services, includes crosscutting services' activities related to the sea, benefiting all other groups. It comprises, in particular, activities such as education, training and R&D, governance activities (specifically, public administration), as well as maritime security activities and maritime spatial planning, and other service activities. Those include maritime information and communication services, consulting and business services in the areas of the sea, financing and marine insurance, as well as trade and distribution activities related to the sea, when not directly attributable to a specific group (e.g. fish and shellfish trade, attributable to the group 1). These group's activities contribute to several functions: knowledge, regulation, safety, environment and services supply (Figure 12).

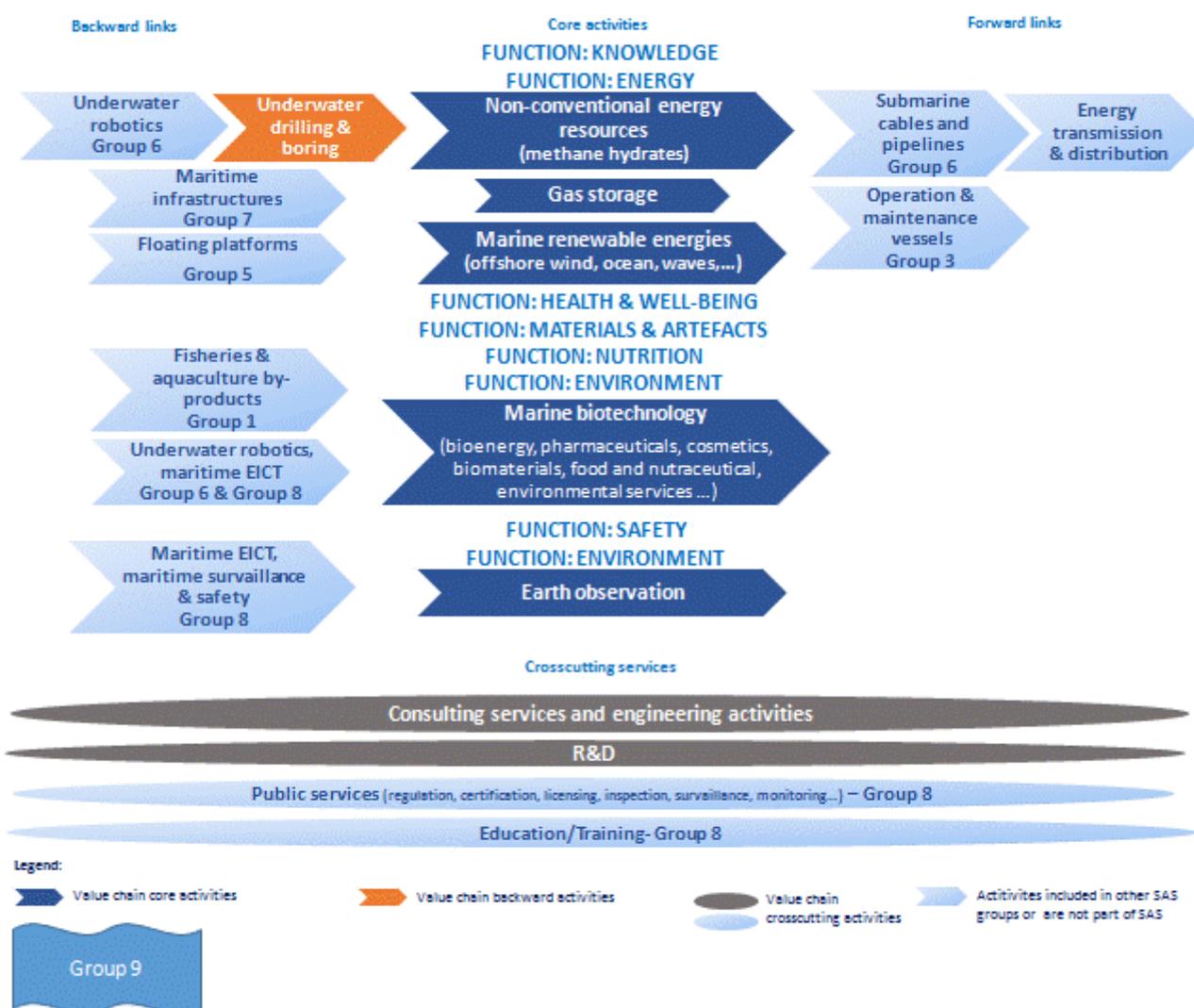
Figure 12 - SAS value chain for group 8 - Maritime services



2.1.2.9. New uses and resources of the ocean

Group 9 was established in order to identify and quantify a set of emerging activities, yet with little economic importance, which would, otherwise, be "diluted" in other activities. It covers activities that will strengthen the national knowledge function in all emergent marine areas, as well as the energy function in a more or less near future, such as marine renewable energies (offshore wind, waves, tides, currents), research and exploitation of unconventional energy resources (gas hydrates) and gas storage. It also includes marine biotechnology that may contribute to diverse functions, namely the energy through bioenergy production from seaweed, but also the health & well-being function (through production inputs for the pharmaceutical and cosmetic industries), materials & artifacts (through biomaterials), nutrition (inputs for nutraceutical) and environment. Earth observation is other emergent area, particularly active in Portugal, which will strongly contribute to safety and environment functions (Figure 13).

Figure 13 - SAS value chain for group 9 - New uses and resources of the ocean

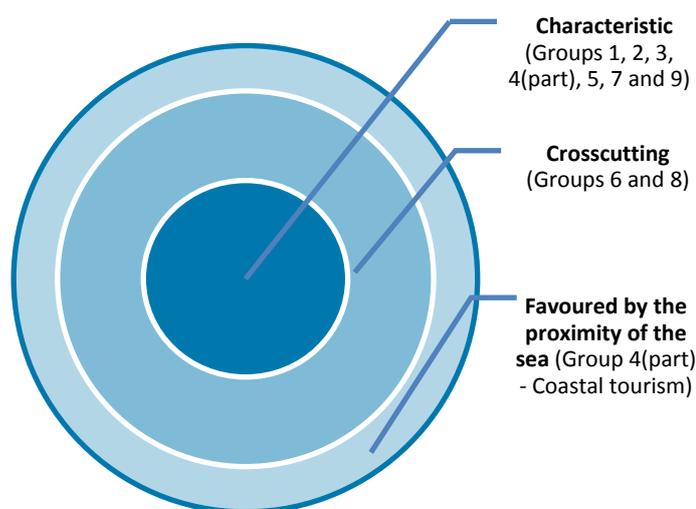


2.1.3. Scope by “observation level”

In addition, the SAS information was segmented into observation levels:

- **Characteristic activities** - activities in which an important part of the operations takes place at sea or whose products come from or are intended for use at sea or on the shore limit. This level includes all groups except 6 - Maritime equipment, 8 - Maritime services and part of 4 - Recreation, sports, culture and tourism (notably coastal tourism);
- **Crosscutting activities** - activities of support to the remaining activities considered under the SAS scope. Includes 6 - Maritime equipment and 8 - Maritime services;
- **Activities favored by the proximity of the sea** - include the accommodation activities, restaurants and imputed rents of second homes located in villages in coastal areas (based on the European classification of coastal and non-coastal areas, i.e. parishes with maritime coast or with 50% or more of the surface up to 10 km away from the sea). This set of activities corresponds to coastal tourism.

Figure 14 - SAS aggregation by "observation level"



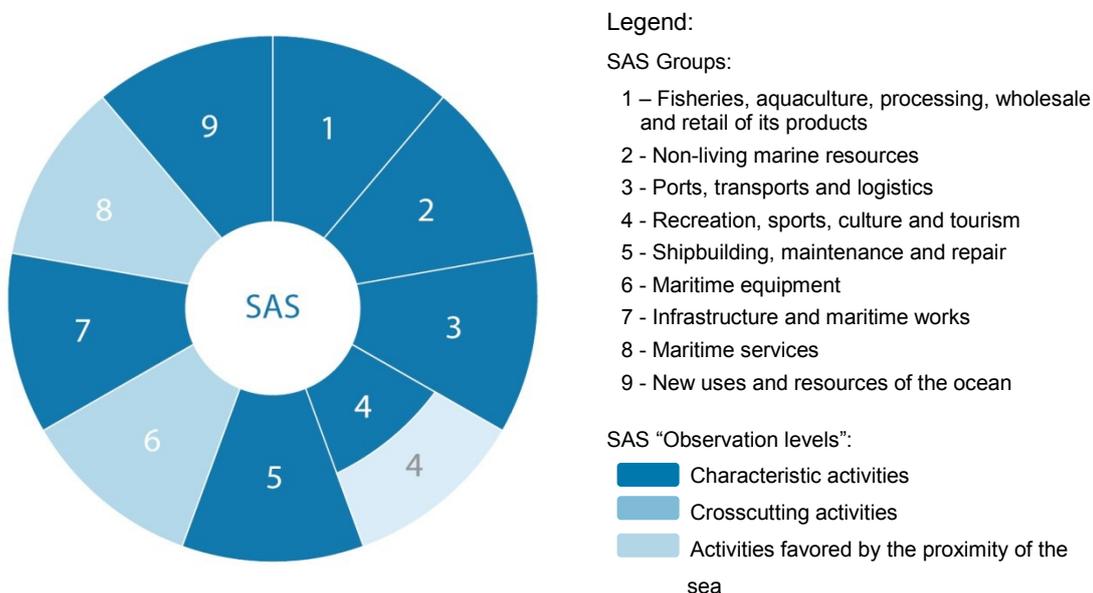
The purpose of this distinction was the specificities of the Portuguese economy concerning the territory. Calculations based on EUROSTAT database for Local Administrative Units, level 2 (LAU 2) population distribution in the period 2.1.2014 -1.1.2015, for the EU-28, indicate that 52% of the population is located in the coastal area (LAU 2 criteria, i.e. location in the coastal parish). Thus, there is prevalence of economic activities in general and of tourism in particular. Box 1 details this aspect.

This analysis also facilitates the use of SAS results in supporting public policies. Characteristic activities are major concerns of specific maritime policies. Activities favoured by the proximity of the sea are strongly dependent on policies for marine environment quality policies, policies for

coastal area and policies for the coordination between land and maritime spaces, among others. Crosscutting activities are fundamental to support the ocean economy and their growth, and they include, for example, innovation and research, maritime carriers and training, as well as important technological and industrial fields, such as the ones related with equipment supply, and services like specific financial and assurance services. For these crosscutting activities it is essential a strong coordination of policies, considering the maritime specificities in broader policies, like the ones dedicated to research and innovation or to industrial development.

The link between the 9 groups and the 3 observation levels are presented in Figure 15.

Figure 15 - Link between SAS "observation levels" and groups



Box 1 - Tourism in coastal areas - How it was considered in SAS

In compiling the SAS for Portugal it were included coastal tourism activities. The compilation of data on tourism within the SAS, which includes hotels and similar establishments, restaurants and similar establishments, travel agencies, tour operators and other reservation services and related activities, was particularly complex.

Under the SAS, and according to *Turismo de Portugal*, IP, in sea-related tourism analysis were considered two aspects:

- Consumption stemming from the motivations of consumers;
- Territory (geographic location of consumers of tourism products), taking into account the definition of coastal area.

As far as the motivation of consumers is regarded, in the context of SAS, different types were registered, namely:

- Cruises;
- Nautical (recreational/sports);
- Sun and sea;
- Sporting event (who participate) and for sports-event (onlooker who goes to watch the event);
- Health tourism (e.g. : thalassotherapy);
- Scientific tourism/research;
- "Nature tourism" (e.g.: observation of cetaceans).

The selection of related kind of economic activity units, including hotels and restaurants, resulted, in a first phase, from the intersection with the geographical classification (i.e., check if the units were in parishes classified as coastal or not). However, the implementation of this methodology was complex due to numerous constraints, namely:

- **Definition of "regional/coastal zone"** - EUROSTAT and EC/DGMARE, in the study Blue growth, used the definition: the NUTS 3 regions with coastline areas, as well as NUTS 3 without coast area, where more than half the population lives within 50km of the sea. In the preparatory document of the National Ocean Strategy 2013-2020, "The Ocean Economy in Portugal" was adopted this criterion for the accounting of GVA and employment of coastal tourism. A more recent study by EUROSTAT, in the framework of Tourism Statistics, indicates that the NUTS 3 level approach is very comprehensive and has another criterion, from which the parishes, within each NUTS 2, are classified as coastal or non coastal areas, according to the distance to the sea:

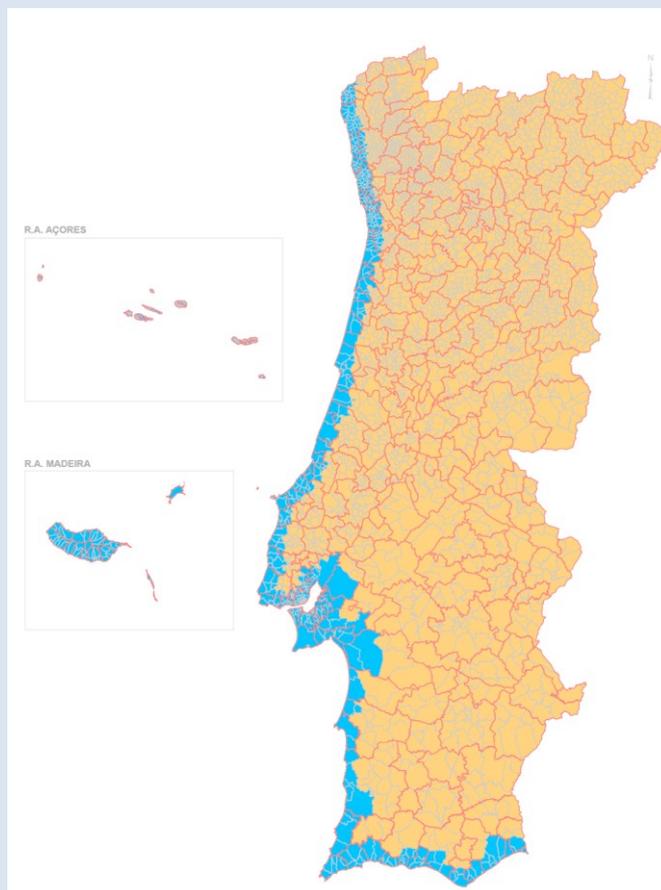
- If the parish is by the sea, it is part of the coastal region;
- If the parish is not by the sea, but has 50% of its surface 10Km away from the sea, is also considered coastal parish;
- All other parishes are considered non-coastal.

In preparing the SAS to Portugal, the working group (Statistics Portugal/DGMP/*Turismo de Portugal*, I.P.) opted for the latest criteria presented by EUROSTAT (v. Figure 16).

- **Component motivation** - When considering only the geographical component one would be ignoring the motivation component (e.g. not all tourism which takes place in Lisbon and Oporto is related to the sea). Thus, the business component was not included in the SAS estimates.

- **Inclusion of river tourism** - this form of tourism sometimes uses the same means and equipment that "sun and sea" tourism and the same company can operate the means regardless of being in a river or marine environment. The importance of "river tourism" type, within the total tourism related to water (the number of Tourist Animation Agents in national tourism register whose activity is classified as "Water") was not considered relevant.

Figure 16 - Map of the coastal areas in Portugal – LAU 2



Source: Statistics Portugal, Cartography based on CAOP - Official Administrative Map of Portugal, 2014

The simple application of geographical criteria (i.e. location in the coastal parish) could imply, given the characteristics of the Portuguese territory, an overvaluation of the Sea component (e.g.: not all hotels located in Lisbon chose this location due to the proximity of the sea. Indeed, while capital, Lisbon gathers other attributes beyond the geographical, which justify the choice). In very synthetic terms, the calculation methodology for this component may be summarized as follows:

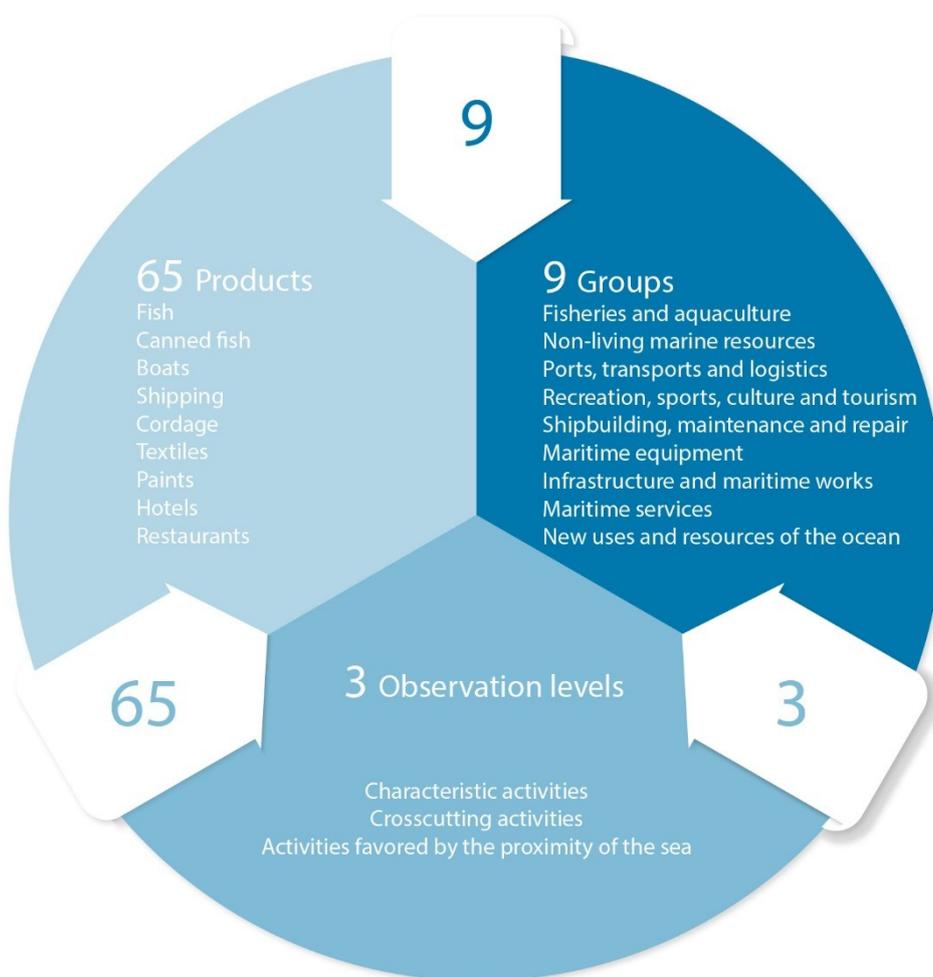
- **Restaurants** - the units selected were located in coastal parishes (big restaurant chains and catering companies were not considered). Using detailed information on NA/Tourism Satellite Accounts (TSA) it was possible to consider only the consumption for leisure tourism purposes, i.e. the business was not included;
- **Hotels** - the selected units were located in coastal parishes (the headquarters of hotel chains were not considered). As in the case of restaurants, using detailed information on NA/TSA it was possible to consider only the consumption for leisure tourism purposes, i.e. the business tourism was not included;
- **Imputed rentals of second homes** - imputed rents correspond to income associated with assets that families hold in the form of own housing and are the counterpart of accommodation services that this asset provides. Note that the estimated value for these services - the imputed rents - is embedded in GDP. The methodology for measuring the rents to be charged followed by NA resorted to the use of the 2011 Housing and Population Census, more specifically the information on actual rents, and the use of an econometric model of hedonic regression. For purpose of the SAS compilation it was applied the NA accounts methodology to coastal parishes. For the metropolitan areas of Lisbon and Oporto were also consulted real estate experts, in order to select only the coastal parishes in which the effect of the proximity of the sea was significant in the context of second homes.

2.1.4. Information scheme of SAS

The fundamental methodological references of SAS were the manual of the European System of Accounts (ESA 2010), the proposal of a database for the IMP, made for EUROSTAT, in 2009: Ifremer et al, Study in the field of maritime policy - Approach towards an Integrated Maritime Policy Database and the studies done and in progress since 2012, by the European Commission/DG MARE, on the Blue Growth.

Taking into account these references and the Portuguese reality, the SAS information was organized in 3 levels: by observation level, by group and by product (Figure 17).

Figure 17 - Information scheme of SAS



2.2. Base year and period of analysis

The base year of this account is 2011. The basis for this choice was the change of the PNA benchmark-year due, amongst other reasons, to the application of ESA 2010.

The period of analysis covers four years, from 2010 to 2013. The Feasibility Study envisaged the compilation of data for 2010 and 2011 for the SAS pilot-project, corresponding to a subset of the final annual NA. Nevertheless, during the compilation the final annual NA for 2012 and 2013 were also ready, allowing the SAS elaboration also for those years.

The SAS universe was thoroughly analysed for 2010 and 2011. For 2012 the selection was made based on the analysis of the 2011 universe and the year 2013 was projected.

The SAS data compilation and calculations were made for 2010, 2011 and 2012 simultaneously. That was an advantage, as comparisons allowed to detect inconsistencies and make improvements.

2.3. Classifications

The implementation of the SAS pilot-project statistical data refers to the use of classifications and nomenclatures adopted at the level of international statistical institutions, considered by the European Statistical System (ESS) and the NSS.

Thus, further to the recommendations of international organizations, the following classifications and nomenclatures were selected for the identification of activities and products related to the sea economy:

- **Portuguese Classification of Economic Activities, Revision 3 (CAE Rev. 3)** - Classification and grouping of statistical units producing goods and services according to the economic activity, allowing its organization in a coordinated and consistent manner, by industry, and statistical comparability at national, EU and global level; the CAE Rev. 3 results from the adaptation of NACE Rev. 2, to the NSS;
- **Statistical Classification of Economic Activities in the European Community (NACE)** (Rev. 1.1 and Rev. 2 were considered) - Allows to sort and group the statistical units, organize and disseminate statistical information, by industry (Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006, published in the Official Journal L 393, 30.12.2006);
- **Classification of Products by Activity in the European Community, 2008 version (CPA, 2008)** - Central classification of goods and services from which other European and national classifications are organized. It allows the comparability of statistics of the Community production of goods and services;

- **Classification of the Functions of Government (COFOG);**
- **Portuguese Classification of Individual Consumption by Purpose (COICOP/HICP) -** Establishes the classification of individual consumption described by the goal or end of the consumption of goods and services made available to the households, used by the families, the non-profit institutions serving households (NPISH) and the general government, to the direct satisfaction of their needs. It was harmonized to meet the OECD Classification of Individual Consumption by Purpose (COICOP) and the European goods and services list from the Household Budget Survey (HBS/IDEF);
- **Classification of the Purposes of Non-Profit Institutions Serving Households (COPNI);**
- **National Accounts Product Classification (Base 2011) (NPCN) -** Establishes a classification of products (goods and services) for NA (the nomenclature was inspired by Regulation (EC) No 2223/96 of 25 June 1996);
- **National Accounts Industry Classification (Base 2011) (NRCN) -** Establishes a classification of industries for the NA (the nomenclature was inspired by Regulation (EC) No 2223/96 of 25 June 1996);
- **Combined Nomenclature (CN) -** It is a nomenclature designed to meet the needs of the common customs tariff and the external trade statistics of the Community (goods traded in international trade); it is also used in intra-Community trade statistics;
- **National Classification of Education and Training Areas (CNAEF);**
- **International Standard Classification of Occupations (ISCO).**

2.4. Data sources

Since the NA is the economic synthesis statistics par excellence, their development is the statistical operation of maximum information sources integration.

In this context, and considering the main activities of the NSS, the main sources of information used within the SAS are detailed ahead.

2.4.1. Statistics Portugal (National Accounts)

- Supply and use tables (SUT);
- Output matrix;
- Intermediate consumption matrixes;
- NA working files;
- Government statistics.

2.4.2. Other data sources from the National Statistical System (NSS)

The following data sources were used resulting from statistical operations of Statistics Portugal or other delegated entities responsibility (Table 3).

Table 3 - SAS main data sources and responsible entities

Data source	Responsible entities
Balance of Payments	<i>Banco de Portugal</i> (Portuguese central bank)
Reports and Accounts Report and Financial Statements	Corporations and other private entities
Public Works Observatory (OOP) database	<i>Instituto dos Mercados Públicos, do Imobiliário e da Construção, I.P.</i> (IMPIC,I.P.) (Institute of public markets, real estate and construction)
Account of the Governments of the Azores and Madeira	Governments of the Azores and Madeira Statistics Portugal
Simplified Business Information (SBI/IES)	Ministry of Finance/Statistics Portugal/ <i>Banco de Portugal</i> (Portuguese central bank)
Survey on National Scientific and Technological Potential (IPCTN)	Ministry of Science and Education/DGEEC
General State Accounts Account Management (Budgetary control maps of the expenditure and revenue)	Portuguese General Government
Budgets and Accounts of Private Institutions of Social Solidarity (OCIP)	<i>Instituto de Informática. I.P. da Segurança Social</i> (Institute of Information Technology of Social Security Ministry)
Survey of International Tourist Spending (IGTI) Survey on the Touristic Demand of Residents (IPTR)	<i>Turismo de Portugal, I.P.</i> (Tourism central public authority)/Statistics Portugal
Annual Survey to the Construction Business (IAEC) Annual Survey on Industrial Production (IAPI) Household Budget Survey (HBS/IDEF) International Trade Statistics (ITS) Labor Force Survey (LFS) National Accounts (NA) Simplified Business Information (SBI/IES)	Statistics Portugal

2.4.3. Administrative data sources

Additionally to the main data sources already mentioned, there was a need for additional research, in order to bridge information gaps, particularly in economic activities that were not clearly identified.

During the selection process of the KAU to integrate SAS, it was necessary to search for additional information with the purpose of validate the actual existence of maritime activities, its importance and its nature, to facilitate the classification by group and observation level.

The main data sources used, were:

- General Government Budget (CGE);
- Corporations' Annual Reports and Report and Financial Statements;
- Corporations and other entities *website* or *facebook*;
- Corporations/Institutions directories provided by third parties;
- Ministry of Justice *website* (<https://publicacoes.mj.pt/Pesquisa.aspx>);
- Nautical sport's Federations;
- Professional Associations;
- Universe of other satellite accounts, namely the Sports Satellite Account (SSA), the Culture Satellite Account (CSA) and the Social Economy Satellite Account (SESA);
- Various administrative sources.

2.4.4. Other information from partners through meetings and email contacts

The necessary data for the SAS accomplishment was complemented by other information from the sea partners or other entities, through meetings and email contacts. A significant number of entities were contacted along the project and several technical meetings occurred (Table 7 on [Annex I](#)). The main resulting information was the following:

- A3ES, Database on Accredited Higher Education (<http://www.a3es.pt>)
- AEP, *Empresas de I&D e Ensino Superior* (list of corporations and high education with R&D, available on AEP site)
- Albano T. Carmo, *Diretório Portos & Transportes 2010-2011* (Ports and logistics directory)
- ANQEP, *Diretórios Entidades Formadoras Mar 2010-2012* (Professional training entities directory)
- APL, *Diretórios Comunidade Portuária* (Port community directory)

- APL, *Diretórios JUP* (Ports single window directory)
- APP, *Diretorios Comunidades Portuárias* (Port communities directories)
- APSS, *Diretorios Infraestruturas e Obras Marítimas* (Infrastructures and maritime works directory)
- COTEC Portugal, *Diretórios do Relatório BlueGrowth Portugal* (BlueGrowth Portugal report directory)
- DGPA, *Listagem de centros de depuração e de expedição de moluscos e bivalves*, Agosto 2010 (www.dgpa.min-agricultura.pt/xeo/attachfileu.jsp?look...att...n...) (List of operators of purification centres and dispatch centres of live bivalve molluscs)
- DGMP, *Internal document from Catarina Resende*, FP7 Funded Projects with Portuguese participation (Cordis Database), 31 dez 2014
- DGMP, *Listagem de Entidades de Ensino Superior e I&D Mar* (List of entities from sea/ocean high level education and R&D)
- DGMR, *Compradores registados 2010-11* (Registered buyers)
(<http://www.dgrm.minagricultura.pt/xportal/xmain?xpid=dgrm&actualmenu=187582&selectedmenu=233045&xpgid=genericPage&conteudoDetalhe=232956>)
- DGMR, Marine Strategy for the Subdivision of the Continent, Coastal waters abstraction (Tabela IV.131)
- DGEEC, *Lista de empresas que declararam ter desenvolvido atividades de Investigação e Desenvolvimento (I&D)* (List of companies that reported having developed R&D activities)
- DGEEC, *Alunos Inscritos no Ensino Superior*, 2009-2010, 2010-2011, 2011-2012 (information available on DGEEC site) (Students Enrolled in Higher Education)
- DGEEC, *Alunos Inscritos no Ensino não Superior* (information available on DGEEC site) (Students Enrolled in non-Higher Education)
- FCT, *An Analysis of the Portuguese Research and Innovation System Challenges, strengths and weaknesses towards 2020*, May 2013
- FCT, Database on R&D projects, institutions and financing by FCT, 2010-2015
- Algés Nautical fair, 2014 (several catalogs)
- ESF, Professional qualification from FOR-MAR
- INCI, *Alvarás de Construção* (www.inci.pt) (Building permits)
- IPDJ, *Atividades Subaquáticas 2014* (List of Underwater activities associations, clubs and groups)
- IPDJ, *Canoagem 2013* (List of Canoeing associations, clubs and groups)
- IPDJ, *Listagem de Escolas de Mergulho*, setembro 2014 (List of Diving schools)

- IPDJ, *Motonáutica* 2013 (List of Motorboats associations, clubs and groups)
- IPDJ, *Pesca de Alto Mar* 2013 (List of Deep-sea fishing associations, clubs and groups)
- IPDJ, *Pesca Desportiva* 2013 (List of Recreational fishing associations, clubs and groups)
- IPDJ, *Remo* 2013 (List of Rowing associations, clubs and groups)
- IPDJ, *Surf* 2013 (List of Surf associations, clubs and groups)
- IPDJ, *Vela* 2013 (List of Sailing associations, clubs and groups and schools)
- *Jornal da Economia do Mar*, Edição N°2, setembro 2014 (*Sea economy journal*)
- LNEC, *Obras Hidráulicas – Lista de gestores gerais da qualidade* (www.lnec.pt/qpe/marca/lista_ggg.pdf) (Hydraulic works – list of quality managers)
- Logitrans 2014 (Several catalogs)
- MarAlgarve Expo, 9 a 11 outubro 2014 (Several catalogs)
- Oceano XXI, *Diretorio do Relatorio Desafios do Mar 2020* (Challenges for the Ocean in 2020 report directory)
- *Portal Agro-negócios* (<http://www.agro-negocio.pt/diretorio.php>) (Agri-business portal)
- *Portal do Mar: náutica de recreio* (http://www.portaldomar.pt/PortaldoMar/DOC_002553) (Recreational boating portal)
- Portos dos Açores, *Diretorios Comunidade Portuária e Infraestruturas e Obras Marítimas* (Port community and infrastructures and maritime works directories from the Azores ports)
- PTPC (www.ptpc.pt/index.php/pt/documentos-associacao/category/9-ptpc) (European Construction Technology Platform)
- RAA, *Operadores Marítimo-Turísticos* (Maritime–tourist operators in RAA)
- RNAAT – *Registo Nacional dos Agentes de Animação Turística, “Água”* (National registry of business companies of touristic animation from Turismo de Portugal, regarding “Water”)
- Skipperslog - *Diretorio “Marinas & Náutica de Recreio”, 2012-2013* (Marinas and recreational boating directory)
- *Viana Terra Náutica* (www.altominho.pt) (Nautical directory from Alto Minho)

3. SAS universe

3.1. Kind-of-activity units selection

The SAS universe was selected following the preparatory work that took place for the definition of the universe throughout the year 2014 and beginning of 2015.

The SAS universe is a subset of the NA universe (Base 2011) by Institutional Sector. Considering the changes operated by the ESA 2010, and the new benchmark-year of PNA, 2011 was also considered the base year in SAS.

An exhaustive analysis of the years 2010 and 2011 was made. In a first phase, the Local KAU (Box 2) to integrate the SAS universe were selected according to the criteria of industry classification of economic activities (CAE Rev. 3, 5 digits) of the KAU, according to the NACE Rev. 2/CAE Rev. 3 codes list previously set for the SAS universe within the Feasibility Study. In a second phase, other codes were analyzed, for a set of entities identified as having a maritime character.

Box 2 - Local Kind-of-activity unit (KAU) definition

KAU definition:

“Definition: the local kind-of-activity unit (local KAU) is the part of a kind-of-activity unit (KAU) which corresponds to a local unit. The local KAU is called establishment in the 2008 SNA and ISIC Rev. 4. A KAU groups all the parts of an institutional unit in its capacity as producer contributing to the performance of an activity at class level (four digits) of the NACE Rev. 2 and corresponds to one or more operational subdivisions of the institutional unit. The institutional unit’s information system must be capable of indicating or calculating for each local KAU at least the value of production, intermediate consumption, compensation of employees, the operating surplus and employment and gross fixed capital formation”.

Source: EUROSTAT (2013), ESA 2010, pages 49-50

Where the NACE Rev.2/CAE Rev.3 codes could not be considered “totally” sea, it was necessary to establish contacts with the relevant authorities involved for selective collection of information. In this sense, the teamwork, composed of Statistics Portugal and DGMP technicians, made numerous visits and meetings with various interlocutors. A list of contacted entities, meetings and visits arranged can be found in [Annex I](#).

The reference SAS universe had PNA universe (Base 2011) as framework. This is obtained basically from the Statistics Portugal Simplified Business information (SBI/IES). This database provides the registration of statistical units (Corporations, Non-profit institutions (NPI), Public Administration, etc.) active in the Mainland and the Autonomous Regions of the Azores and Madeira.

The SBI/IES benefits from continuous and annual updates, integrating information from various sources (internal and external), including: administrative files (national register of legal persons); Ministry of Finance (income tax and VAT); Ministry of Economy (Single Report); Banco de Portugal (central balances); statistical surveys and specific surveys of Statistics Portugal, to update the file. Thus, the NA reference universe is updated each year for all active economic activity units.

According to ESA 2010 (page 31, §2.31 and §2.32), mandatory methodological reference for NA in the EU, *“Macroeconomic analysis does not consider the actions of each institutional unit separately — it considers the aggregate activities of similar institutions. So units are combined into groups called institutional sectors, some of which are divided into subsectors”... “Each sector and subsector groups together the institutional units which have a similar type of economic behaviour...”*.

The **classification of institutional sectors** provided by ESA 2010 with the breakdown considered in the SAS is the bellow mentioned (definition in Box 3):

S.1 Total economy

- S.11 Non-financial corporations;
- S.11001 Public non-financial corporations;
- S.12 Financial corporations;
- S.13 General government;
- S.14 Households;
- S.15 Non-profit institutions serving households.

S.2 Rest of the world.

Based on the information gathered, Statistics Portugal prepared systematized listings of sea Local KAU (name, tax number, site/other web information, institutional sector), by group, with the collaboration of DGMP. This selection was made from various information crossings, compiled in recent studies undertaken directories [e.g. COTEC Portugal' Blue Growth, Oceano XXI' Challenges for the ocean in 2020), entities directories of the various areas involved (e.g. publication “Skipperslog directory” and publication "Directory Ports & Transport"], administrative data (ex.: licenses) and manual collection from fairs and events catalogs. This task was particularly time consuming and complex, given the dispersion of information sources and units, as well as the existence of outdated and incomplete administrative data (namely units without tax number).

Box 3 - Institutional Sectors definition - ESA 2010

S.11

“Definition: the non-financial corporations sector (S.11) consists of institutional units which are independent legal entities and market producers, and whose principal activity is the production of goods and non-financial services. The non-financial corporations sector also includes non-financial quasi-corporations”.

Source: EUROSTAT (2013), ESA 2010, page 34.

“Definition: the public non-financial corporations subsector consists of all non-financial corporations, quasi-corporations and non-profit institutions, recognised as independent legal entities, that are market producers and are subject to control by government units”.

Source: EUROSTAT (2013), ESA 2010, page 35.

S.12

“Definition: the financial corporations sector (S.12) consists of institutional units which are independent legal entities and market producers, and whose principal activity is the production of financial services. Such institutional units comprise all corporations and quasi-corporations which are principally engaged in: financial intermediation (financial intermediaries); and/or auxiliary financial activities (financial auxiliaries). Also included are institutional units providing financial services, where most of either their assets or their liabilities are not transacted on open markets”.

Source: EUROSTAT (2013), ESA 2010, page 35.

S.13

“Definition: the general government sector (S.13) consists of institutional units which are non-market producers whose output is intended for individual and collective consumption, and are financed by compulsory payments made by units belonging to other sectors, and institutional units principally engaged in the redistribution of national income and wealth”.

Source: EUROSTAT (2013), ESA 2010, page 44.

S.14

“Definition: the households sector (S.14) consists of individuals or groups of individuals as consumers and as entrepreneurs producing market goods and non-financial and financial services (market producers) provided that the production of goods and services is not by separate entities treated as quasi-corporations. It also includes individuals or groups of individuals as producers of goods and non-financial services for exclusively own final use”.

Source: EUROSTAT (2013), ESA 2010, page 45.

S.15

“Definition: the non-profit institutions serving households (NPISHs) sector (S.15) consists of non-profit institutions which are separate legal entities, which serve households and which are private non-market producers. Their principal resources are voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general government and from property income”.

Source: EUROSTAT (2013), ESA 2010, page 46.

S.2

“Definition: the rest of the world sector (S.2) is a grouping of units without any characteristic functions and resources; it consists of non-resident units insofar as they are engaged in transactions with resident institutional units, or have other economic links with resident units. Its accounts provide an overall view of the economic relationships linking the national economy with the rest of the world. The institutions of the EU and international organisations are included”.

Source: EUROSTAT (2013), ESA 2010, page 47.

3.2. Main data sources to validate the SAS universe

During the selection process of SAS universe, it was necessary to search for additional information, in order to identify the activities related to the sea, its importance and its specific nature, with the intention of classifying the different local KAU by group.

Along the process a number of additional KAU were included and other withdrawn or transferred from one group to another, considering, in particular, the following cases:

- Adjustments resulting from further research on some specific KAU not initially considered, because they did not belong to the previous list of CAE Rev. 3 codes selected in the Feasibility Study;
- Exclusion of some CAE Rev. 3 codes considered on the Feasibility Study list, when it was concluded that the activity carried out by the respective KAU was not directly related to the sea and/or the information appropriation was not possible for the purpose of SAS.

Not all units selected to integrate SAS were fully considered in the Universe. A big number was only partially considered, through coefficients or weighting schemes. In these cases, their integration and accounting was based on information collected through additional sources, such as annual reports and accounts of the entities themselves, Statistics Portugal's surveys or other resident sources on Statistics Portugal, such as the Public Works Observatory database (OOP) or the R&D Survey (IPCTN), among others (see item [2.4](#)).

Considering the exposed methodological approach, the SAS universe was stabilized in around 60,000 entities, in the period 2010-2013.

The main results for the base year, 2011, disaggregated by observation level, by group and by institutional sector are presented in [Annex II](#).

3.3. The particular case of sea training, education and R&D universe

Sea training, education and R&D had a specific treatment, given their relevance, especially in the case of education and R&D.

One of the difficulties experienced by the team relates to the identification of the entities that carry out sea/ocean professional training, higher education and training and R&D sea, as well as the delimitation of its activity. In this sense, the National Agency for Qualification and Professional Education (ANQEP) and the Professional Training Centre for Fisheries and Sea

(FOR-MAR) have been contacted for vocational training issues, and the Portuguese Institute of Sport and Youth (IPDJ), to the issue of training in areas of nautical sports.

For the high level education the selection of sea or sea related courses relied on a detailed analysis made by DGMP, using the databases from the Agency for Assessment and Accreditation of Higher Education (A3ES) and Directorate-General for Education and Science Statistics (DGEEC) (see Box 4).

Box 4 - Education at SAS

The educational services related to sea training in the 2nd and 3rd level of basic education and secondary education levels was difficult to estimate, as there are no specific subjects related to the sea.

For the **high level education** a first selection of **sea or sea related courses** was made based on the Agency for Assessment and Accreditation of Higher Education (A3ES) database on accredited courses (at June 2015) by Fields of Science (FOS), by academic degree (PhD, master, bachelor) and by Higher Educational Institution. This was complemented by information on the courses' designation, description, code of National Classification of Education and Training Areas (CNAEF) and number of students by course, from the database provided by the Directorate-General for Education and Science Statistics (DGEEC). It was necessary to proceed to a thorough and time-consuming analysis of the bachelors, masters and doctorates courses related to the sea/ocean, from a detailed list supplied by DGEEC, course by course.

The selection of the entities with sea related courses was made with the following criteria:

- Entities with courses unquestionably related to the sea;
- Crosscutting courses such as engineering, biology or geology were not considered, although they might include sea related subjects;
- In case of doubt, the course was not included.

The criteria, which sought to follow a harmonized and balanced way, may have, possibly, underestimated the courses and the corresponding sea related students, as it is known that some courses partially teach sea materials.

The DGEEC database allowed the identification of the sea courses, the respective teaching entities, the number of students enrolled in sea courses and the total number of students enrolled by entity. These variables allow the estimation of coefficients on a later stage.

For 2010, 2011 and 2012 (corresponding to 2009-2010, 2010-2011 and 2011-2012 school years) sea or sea related high education courses were identified, the respective number of students enrolled and the number of institutions, as referred in the table ahead.

Number	2009-2010	2010-2011	2011-2012
High Education Sea Courses	36	38	41
Students enrolled in Sea Courses	1,906	2,145	2,171
High Education Institutions with Sea Courses	10	11	12

With regard to the sea/ocean R&D, the DGEEC, the National Institute of Industrial Property (INPI) and the Portuguese science and technology authority *Fundação para a Ciência e a Tecnologia* (FCT) (Portuguese science and technology authority) have been consulted. Concerning the sea/ocean high level education and R&D in the universities, the team consulted the Council of Rectors of Portuguese Universities (CRUP), together with the rectors of the universities, to identify the sea/ocean R&D services and the sea/ocean higher education and training. The organizations contacted for this purpose are detailed in Annex I. (see Box 5).

Box 5 - R&D at SAS

Sea or sea related R&D projects were also the object of a thorough analysis in *Fundação para a Ciência e a Tecnologia* (FCT), databases. FCT is the Portuguese science and technology authority, the main public organization responsible for R&D financing and EU R&D funds management. It has a detailed database on all R&D financed projects that allows the analysis of the main object of the projects and the identification of its sea relation. A comprehensive and time-consuming research work of R&D projects on the "sea" was carried out by DGMP having as main data sources the database of the R&D funding from the FCT. From that database it was possible to identify the sea R&D projects, the respective institution that delivers it (among universities/academia, private foundations, research centres and industry) and the annual financing, both for the sea R&D projects and for the total R&D of that entity. These variables allowed finding out coefficients latter on.

The sea or sea related R&D projects choice was made on the same criteria as for sea or sea related high education courses:

- They are undoubtedly sea or sea related R&D projects;
- In case of doubt, the project was not included.

For 2010, 2011, 2012 and 2013 sea or sea related R&D projects were identified in a number of institutions referred in the table ahead.

Number	2010	2011	2012	2013
KAU from the Sea Universe that answer IPCTN	315	334	285	311
KAU from the Sea Universe that answer IPCTN with a figure different from zero	117	140	132	132
KAU from the Sea Universe that did not answer IPCTN, with R&D*	6	9	9	10
KAU with Sea R&D (figure different from zero)	123	149	141	142
of which Totally Sea	45	53	36	39
of which Partially Sea	78	96	105	103
Total KAU in the IPCTN	3,163	3,459	3,515	3,549
Share of KAU with Sea R&D in Total KAU in the IPCTN	3.9%	4.3%	4.0%	4.0%

Note*: KAU from the FCT R&D financing database that did not answer IPCTN

3.4. Industries within SAS

The selection of SAS units/KAU was based on the NACE Rev. 2/CAE Rev. 3 codes previously defined in the Feasibility study and adjusted along the selection process described in the last two items (3.1. and 3.2).

A set of NACE Rev. 2 class codes were totally considered in SAS, namely codes:

- 03.11- Marine fishing
- 03.12 - Freshwater fishing
- 03.21 - Marine aquaculture
- 03.22 - Freshwater aquaculture
- 10.20 - Processing and preserving of fish, crustaceans and molluscs
- 30.11 - Building of ships and floating structures
- 30.12 - Building of pleasure and sporting boats
- 33.15 - Repair and maintenance of ships and boats
- 47.23 - Retail sale of fish, crustaceans and molluscs in specialized stores
- 50.10 - Sea and coastal passenger water transport
- 50.20 - Sea and coastal freight water transport
- 50.30 - Inland passenger water transport
- 50.40 - Inland freight water transport
- 77.34 - Renting and leasing of water transport equipment

The industry codes considered sequentially and by level of observation and by group are detailed in [Annex III](#).

3.5. Products within SAS

After the selection of SAS units/local KAU, sea products were also chosen for the same purpose, based on the National Accounts Product Classification (NPCN), with the most detailed NA aggregation of 433 products (P433). In the sea products process of choice there was a concern to maintain the maximum coherence between the products and the industries and groups previously selected. The results were then aggregated to a sea products P88 level.

Products such as fish and maritime transports were totally considered as sea products, namely the products with the following NPCN P433:

- 03001 - Fish, live
- 03002 - Fish, fresh or chilled
- 03003 - Crustaceans, not frozen

- 03004 - Molluscs and other aquatic invertebrates, live, fresh or chilled
- 03005 - Pearls, unworked
- 03006 - Other aquatic plants, animals and their products
- 03007 - Support services to fishing and aquaculture
- 1021 - Fish, fresh, chilled or frozen, Crustaceans, molluscs and other aquatic invertebrates, frozen, prepared or preserved, Flours, meals and pellets, unfit for human consumption, and other products n.e.c. of fish or of crustaceans, molluscs or other aquatic invertebrates, Smoking and other preservation and preparation services for manufacture of fish products; sub-contracted operations as part of manufacturing of processed and preserved fish, crustaceans and molluscs (10.20.1 + 10.20.3 + 10.20.4 + 10.20.9)
- 1022 - Fish fillets, dried, salted or in brine, but not smoked, Fish livers and roes dried, smoked, salted or in brine; flours, meals and pellets of fish, fit for human consumption, Fish, dried, whether or not salted, or in brine, Fish, including fillets, smoked (10.20.21 + 10.20.22 + 10.20.23 + 10.20.24)
- 1023 - Fish, otherwise prepared or preserved, except prepared fish dishes, Caviar and caviar substitutes (10.20.25 + 10.20.26)
- 3011 - Ships and floating structures
- 3012 - Pleasure and sporting boats
- 5001 - Sea and coastal passenger water transport services (50.1)
- 5002 - Inland passenger water transport services (50.3)
- 5003 - Sea and coastal freight water transport services and Inland freight water transport services (50.2 + 50.4).

Other products were considered only partially. In these cases, any appropriation to the SAS universe was accompanied by an additional research work, considering, in particular, the relevance of the products, quality and credibility of available data sources and the feasibility of measurement for statistical purposes, in order to have robust estimates.

The final list of sea products considered in SAS is presented in [Annex IV](#), being composed of 65 products.

3.6. Residence and territory criteria and International bodies

SAS universe followed the ESA 2010 regulation and manual concerning the resident units principle to build the NA (Box 6).

Box 6 - Resident and non-resident units - ESA 2010

According to ESA 2010 Manual (page 12):

“Resident and non-resident units; total economy and rest of the world

1.61 The total economy is defined in terms of resident units. A unit is a resident unit of a country when it has a centre of predominant economic interest on the economic territory of that country — that is, when it engages for an extended period (one year or more) in economic activities on this territory. [...]

1.62 Resident units engage in transactions with non-resident units (that is, units which are resident in other economies). These transactions are the external transactions of the economy and are grouped in the rest of the world account. So the rest of the world plays a role similar to that of an institutional sector, although non-resident units are included only in so far as they are engaged in transactions with resident institutional units.

1.63 National resident units, treated in the ESA 2010 system as institutional units, are defined as:

(a) those parts of non-resident units which have a centre of predominant economic interest (usually which engage in economic transactions for a year or more) on the economic territory of the country;

(b) non-resident units in their capacity as owners of land or buildings on the economic territory of the country, but only in respect of transactions affecting such land or buildings.

And ESA 2010 Manual (page 25):

2.04 The units which constitute the economy of a country and whose flows and stocks are recorded in the ESA 2010 are those which are resident. An institutional unit is resident in a country when it has its centre of predominant economic interest in the economic territory of that country. Such units are known as resident units, irrespective of nationality, legal form or presence on the economic territory at the time they carry out a transaction.

A unit is considered resident of a country when it has a centre of predominant economic interest on the economic territory of that country. The ESA 2010 definition of economic territory is detailed in Box 7.

Box 7 - Economic territory and mobile equipment (fishing boats, other ships, floating platforms) - ESA 2010

ESA 2010 Manual (pages 25-26):

“2.05 Economic territory consists of the following:

(a) the area (geographic territory) under the effective administration and economic control of a single government;

(b) any free zones, including bonded warehouses and factories under customs control;

*(c) the national air-space, **territorial waters and the continental shelf lying in international waters, over which the country enjoys exclusive rights;***

(d) territorial enclaves, these being geographic territories situated in the rest of the world and used, under international treaties or agreements between states, by general government agencies of the country (such as embassies, consulates, military bases, scientific bases, etc.);

(e) deposits of oil, natural gas, etc. in international waters outside the continental shelf of the country, worked by units resident in the territory as defined in points (a) to (d).

Fishing boats, other ships, floating platforms and aircraft are treated in the ESA as **mobile equipment, whether owned and/or operated by resident units in the country, or owned by non-residents and operated by resident units.** Transactions involving the ownership (gross fixed capital formation) and use (renting, insurance, etc.) of mobile equipment are attributed to the economy of the country of which the owner and/or operator respectively are residents. In cases of financial leasing, a change of ownership is assumed.

Economic territory may be an area larger or smaller than that defined above. An example of a larger area is a currency union such as the European Monetary Union; an example of a smaller area is a part of a country such as a region.

2.06 Economic territory excludes extraterritorial enclaves.

Also excluded are the parts of the country's own geographic territory used by the following organisations:

(a) general government agencies of other countries;

(b) institutions and bodies of the European Union; and

(c) international organisations under international treaties between states.

The territories used by the institutions and bodies of the European Union and international organisations are separate economic territories. A feature of such territories is that the only residents are the institutions.”

4. Methodology

The selection of the SAS reference population (universe), for the years 2010-2012, was based, at a starting point, in the universe of the Portuguese NA (Base 2011), as already mentioned. Like the NA, the compilation of the SAS population was made by institutional sector (i.e. S.11 - Non-financial corporations, S.12 - financial corporations, S.13 - general government, S.14 - Households; S .15 - Non-profit institutions serving households). Initially, the considered codes were the NACE Rev. 2/CAE Rev. 3 related to the NACE Rev. 1.1 codes set out in Ifremer study for EUROSTAT, previously referenced. However, the building up of the SAS population based only on the NACE Rev. 2/CAE Rev. 3 did not always prove sufficient. Therefore, whenever it was concluded that certain KAUs were relevant in the sea area, these KAU were included, regardless of the NACE Rev. 2/CAE Rev. 3 code.

After the delimitation of the reference population, the collection of economic variables to the generation of income account (production, intermediate consumption, GVA, other taxes on production, other subsidies on production, gross operating surplus), by institutional sector was conducted. Afterwards, simplified SUT for sea products were compiled, having as reference the SUT of Portuguese NA (127 industries x 433 products), which allowed to confront the supply and demand and assess the initial estimates. For the completion of this framework it was necessary to calculate, by selected product, imports, exports, government consumption, private consumption, investment and intermediate consumption of the product. Whenever the detail of data sources allowed (namely Simplified Business Information – SBI/IES and general government administrative data), these values were obtained directly, without the use of coefficients.

Estimates for 2013 were also made, albeit without the analysis of the entire reference population, using a detailed study of the most relevant entities, information relating to external trade and detailed information of the definitive NA.

4.1. Main principles for the compilation of data

The design, data compilation and basic concepts used in the SAS pilot project followed the ones of ESA 2010 regulation and manual (Box 8).

Box 8 - Designing and compiling a satellite account - ESA 2010

According to the ESA 2010 Manual (pages 481-482):

“Designing and compiling a satellite account consists of four steps:

- (a) defining the purposes, uses and requirements;*
- (b) selecting what is relevant from the national accounts;*
- (c) selecting relevant supplementary information, e.g. from various specific statistics or administrative data sources;*
- (d) combining both sets of concepts and figures into one set of tables and accounts.*

Designing and compiling satellite accounts for the first time often reveals unexpected results during the four steps. As a consequence, drawing up satellite accounts is a work-in-progress. Only after experience of compiling and using the satellite, and making modifications where necessary, can an experimental set of tables be transformed into a mature statistical product.

In selecting what is relevant from the national accounts, three aspects can be distinguished: the international national accounting concepts, the operational concepts used in the national account statistics of a country, and the reliability of the national accounts statistics.

[...] Transforming a consistent satellite account into a product for data users may involve additional steps. An overview table with key indicators for a number of years may be introduced. These key indicators could focus on describing the size, components and developments of the specific issue involved, or may show the links to the national economy and its major components. Extra detail or classifications relevant for political and analytical purposes may be added. Detail with little value added or compiled at relatively high costs may be dropped. Efforts could also focus on reducing the complexity of the tables, increasing simplicity and transparency for data users and including standard book-keeping decompositions in a separate table.”

The main variables, aggregates and statistical operations are listed and described ahead and in Annexes V and VI. It follows the methodology description by institutional sector and, finally, the building of a SUT for SAS.

4.2. Main variables, aggregates and statistical operations

ESA 2010 regulation and manual defines the main variables and statistic operations for the National Accounts. The SAS used the same definitions, as referred ahead. [Annex V](#) details the main variables and aggregates definition from the list ahead:

- P.1 Output
- P.11 Market output
- P.12 Output for own final use
- P.13 Non-market output
- P.2 Intermediate consumption

- B.1g Gross-value added
- P.3 Total final consumption expenditure (Households, Non-profit institutions Serving Households and Public Administration)
- P.31 Individual consumption expenditure
- P.32 Collective consumption expenditure
- P.4 Actual final consumption
- P.5 Gross capital formation (GCF)
- P.51g Gross fixed capital formation (GFCF)
- P.52 Changes in inventories
- P.53 Acquisitions less disposals of valuables (ACOV)
- P.6 Exports of goods and services
- P.7 Imports of goods and services
- B.11 External balance of goods and services
- B.2g + B.3g Gross operating surplus and gross mixed income
- D.2 Taxes on production and imports
- D.3 Subsidies
- D.1 Compensation of employees
- D.11 Wages and salaries
- D.12 Employers' social contributions.

Employment was also considered (in full time equivalent – FTE):

- Total
- Self employed
- Employees.

The main European System of Accounts' transactions and algorithms, as well as the main data sources, are listed in [Annex VI](#). The listing is structured by the ESA 2010 sequence of accounts, main set of tables (SUT) and by institutional sector.

4.3. Methodology by Institutional sectors

Similarly to the NA, the SAS universe was assembled by institutional sector. This is justified by the difference in the calculation algorithms, as well as in data sources.

4.3.1. Non-financial corporations (S.11) and Households (S.14)

The compilation of variables for these institutional sectors was carried out based on the universe defined in the previous stage for the following institutional subsectors:

- National private non-financial corporations (S.11002);
- Foreign controlled non-financial corporations (S.11003);
- Households sector (S.14).

The selected local KAU, which compose a subset of the NA universe, were classified according to the group they belong, among the 9 groups defined in the Feasibility Study, NACE Rev. 2 section, and total or partial character of the sea related activity.

The initial compilation of data consisted on the extraction of detailed information for each unit, namely the relevant ESA 2010 transactions of the annual NA. This extraction used as data source Portuguese NA files that convert accounting information from the Integrated Business Account System (IBAS/SCIE) into ESA 2010 transactions (output, intermediate consumption, compensation of employees, etc.), through algorithms.

Based on a detailed product analysis of the sea products, a first estimate of the output allocation by product was made, having as reference output matrices of Portuguese NA. Those NA matrices are in a_{ij} format, where i corresponds to the industry (NRCN - 127 industries) and j corresponds to the product (NPCN - 433 products), at current and constant prices, by institutional sector and by nature (Statistics Portugal (2015), Portuguese National System of Accounts. Benchmark-year 2011. Inventory of Sources and Methods, § 6.1.20). A SAS matrix was extracted from that main matrix, containing only the SAS selected industries and products in each of the 9 groups considered. On a second estimate some adjustments were made, in order to shorten the range of products for each industry, considering only the main ones, regarding the sea.

In the case of the sea unit/KAU considered as partial, the output allocation was also partial, usually using a coefficient assigned to that specific KAU or through a coefficient attributed to that specific NACE Rev. 2/CAE Rev. 3 industry.

On a first phase, those coefficients were mainly obtained directly, by:

- Annual reports of the major units, whenever sea/ocean activities could be individualized;
- Estimates from sea agents (professional associations, ocean clusters association, regulators);
- Etc...

Output (P.1), Intermediate consumption (P.2), GVA and the total compensation of employees (D.1) were estimated per unit/KAU and aggregated by group of industries.

$$P.1 \text{ estimate} = \sum \text{Output by product}$$

$$P.2 \text{ estimate} = P.2 * \frac{P.1 \text{ estimate}}{P.1}$$

$$GVA \text{ estimate} = P.1 \text{ estimate} - P.2 \text{ estimate}$$

This methodology preserves not only the operational structure of the corporation (technical coefficient), but also the consistency between the different variables in the sea output estimates.

$$D.1 \text{ estimate} = D.11 + D.12$$

where

D.11 – Wages and salaries

D.12 – Employers' social contributions

4.3.2. Public non-financial corporations (S.11001)

The data compilation for this subsector was made separately from the rest of S.11 institutional sector, for two main reasons:

- It is a smaller subset of units and it was used as a pilot to make the first **output**, **intermediate consumption** and **GVA** calculations;
- The main national Ports are included in this subset of units and their particularities could be analyzed.

The methodology used for the calculations was the same as the one described in the preceding institutional sector.

4.3.3. General government (S.13)

The SAS general government institutional sector' selected entities were classified according to the respective NACE Rev. 2/CAE Rev. 3 industry, the Classification of the Functions of Government (COFOG), the National Accounts Product Classification (NPCN) (resulting from

NACE Rev. 2/CAE Rev. 3 in the case of non-market output) and SAS group (mainly group 8 – Maritime services).

The basic information used for these entities was the one that "feeds" the accounts of general government (S.13) and, in general, corresponds to the accounts of each of the entities on their annual plans or accounts or Standardized Accounting System (SNC).

The underlying values were classified in the respective Output/Distributive transactions of ESA 2010, using NA classification tables for the government output (S.13).

The following operations/transactions were determined using direct units information: output (P.1) on sea products, intermediate consumption (P.2), compensation of employees (D.1), other taxes on production (D.29) and other subsidies on production (D.39), as well as the Final consumption expenditure by general government on sea products, the GVA and the operating surplus and gross mixed income, for the remaining variables.

To this end, the same base algorithms from the NA were used:

– **Output estimates (P.1)**

$$P.1 = P.11 + P.12 + P.13$$

with

$$P.13 = P.131 + P.132$$

where

P.11 – Market output

P.12 – Output for own final use

P.13 – Non-market output

P.131 - Payments for non-market output (partial payments)

P.132 – Non-market output, other.

The General government institutional sector (S.13) produces mainly 'Non-market output, other' (P.132), which is the output provided for free or at not economically significant prices. This variable is determined by calculating the production costs, using the following algorithm:

$$P.132 = P.2 + D.1 + P.51c + D.29 \text{ paid} - P.11 - P.12 - P.131 - D.39 \text{ received}$$

where

P.11 – Market output

P.12 – Output for own final use

P.131 - Payments for non-market output (partial payments)

- P.2 – Intermediate consumption
- D.1 – Compensation of employees
- D.29 – Other taxes on production
- D.39 – Other subsidies on production
- P.51c – Consumption of fixed capital.

All the transactions listed are usually directly calculated, with the application of the accounting elements conversion table of the entities to ESA 2010 transactions, although in some cases, some parcels have to be estimated indirectly.

- **Compensation of employees estimates (D.1) inherent to ‘Non-market output, other’ (P.132)**

The compensation of employees (D.1) is the result of three components:

$$D.1 = D.11 + D.121 + D.122$$

where

- D.11 – Wages and salaries
- D.121 – Employer’s actual social contributions
- D.122 – Employer’s imputed social contributions.

Wages and salaries and actual employers’ social contributions derived directly from the application of the conversion table between the accounts of entities and ESA 2010 transactions. On the contrary, imputed social contributions of employers (D.122³) were indirectly estimated, for each of the entities of the general government (S.13) that were part of the SAS universe.

- **Employer’s imputed social contributions estimates (D.122)**

Estimations of Employer’s imputed social contributions (D.122) in NA are divided into two categories: Employers’ imputed pension contributions (D.1221) and Employers’ imputed non-pension contributions (D.1222), that include the Government transfers to *Caixa Geral de Aposentações* (CGA) (General Retirement Fund), to face retirement expenditures for which CGA is responsible.

³ “Definition: employers’ imputed social contributions (D.122) represents the counterpart to other social insurance benefits (D.622) (less eventual employees’ social contributions) paid directly by employers to their employees or former employees and other eligible persons without involving an insurance enterprise or autonomous pension fund, and without creating a special fund or segregated reserve for the purpose.”. Source: EUROSTAT (2013), ESA 2010, page 90.

– **Intermediate consumption estimates (P.2)**

The estimate of intermediate consumption (P.2) on NA brings together two components. The first results from the direct application of the conversion table in ESA 2010 transactions to the items in the entities' accounts. Another comes from the treatment of Financial intermediation services indirectly measured (FISIM). FISIM calculations take into account the interests paid on loans and received on deposits. The shares of FISIM by institutional sub-sector and industry in the NA were used for the estimation of this service in SAS.

4.3.4. Financial corporations (S.12)

Following the definition of the SAS universe for this institutional subsector, the extraction of detailed information was made for each unit, including the relevant economic operations of the annual NA, mainly from the SBI/IES, IBAS/SCIE and bank supervision data.

In an exploratory exercise a consistent allocation of economic data from the previously selected units/KAU was made for the sea products and classified according to the SAS groups.

If the unit/KAU was partially sea, the allocation of output, intermediate consumption and compensation of employees to SAS was also partial, usually through coefficients obtained from the NA, assigned to the main sea product or more related to the industry. For each unit, intermediate consumption (*ditto* for compensation of employees) by industry was estimated in proportion to the respective output due to the total output of the KAU. Thus, it was preserved the operational structure of the company (technical coefficient and labour costs in total production) and the consistency between the different variables in the sea products output estimates.

4.3.5. Non-profit institutions serving households (S.15)

Similarly to other satellite accounts, for each year, a systematic work was carried out for crossing data sources files that may be used in this sector, namely:

- SBI/IES - Simplified Business Information - given the characteristics of the NPISH units (S.15), preference was given to Annexes A (resident entities engaged, primarily, commercial activity, industrial or agricultural and non-resident entities with a permanent establishment) and D – Business simplified information (residents who do not exercise, primarily, commercial activity, industrial or agricultural);
- Social Security Wage Contributions Returns;

- Database of the *Instituto de Informática da Segurança Social* (IT Department of the Portuguese Social Security), concerning the accounts and budget for the NPISH;
- Statistics Portugal survey on the non-governmental organizations for the environment (NGOE);
- Annual reports of NPISH;
- R&D Survey IPCTN.

With the available information, estimates were made for the main variables: output, intermediate consumption, GVA, subsidies and compensation of employees, by NACE Rev. 2 and group, for the years 2010-2013.

The estimates used the following algorithm:

$$P.13 = P.2 + D.1 + P.51c + (-D.39) - P.11 - P.12$$

where

- P.2 - Intermediate consumption
- D.1 - Compensation of employees
- P.51c - Consumption of fixed capital
- D.39 - Other subsidies on production
- P.11 - Market output
- P.12 - Output for own final use
- P.13 - Non-market output

being:

$$P.2 + D.1 + P.51c + (-D.39) = P.13 + P.11 + P.12$$

or

$$P.1 = P.2 + D.1 + P.51c + (-D.39)$$

where

- P.1 - Output

$$GVA = P.1 - P.2$$

Subsidies were treated using the data already processed by NA (government) by data source/paying entity and recipient entity classified as in the NA. The largest foundations had a specific treatment, with the appropriation of information already treated for the purposes of other accounts, including the SESA, the CSA and the SSA.

Combining all the information available from different data sources, it was possible to improve the clearance related to sea products and groups. Note that treatment of NPISH (S.15) had an additional difficulty in that the units that make up this institutional sector show heterogeneous features, with different NACE Rev. 2/CAE Rev. 3 codes and various dimensions, with multiple very small units, with lack of information.

Gross Operational Surplus is estimated through the following balance relation, for all institutional sectors:

$$\text{Gross Operational Surplus estimate} = \text{GVA estimate} - \text{D. 1 estimate} - \text{D. 29 estimate} + \text{D. 39 estimate} .$$

where

GVA – Gross value Added

D.1 – Compensation of employees

D.29 – Other taxes on production

D.39 – Other subsidies on production.

4.3.6. The particular cases of education and R&D

Regarding **education**, an estimate was made for services related to teaching of subjects/courses linked to the sea. This estimate was based on a pre-selection of courses unequivocally related to the sea, from the information on the course by entity provided by DGEEC, as described previously (point 3.3.). The identified high education institutions providing sea courses are mainly public entities, classified in the institutional sector S.13. Thus, the calculation methods followed the same rules as described in 4.3.3. The coefficients for the fraction of the sea costs on the total costs of an institution were calculated using, as a proxy, the ratio of the number of students in sea courses in the institution over the total number of students in the institution.

For **Research and Development (R&D)**, a comprehensive research work of R&D projects on the sea was carried out, having as main data sources the IPCTN, the SBI and the database of the R&D funding from the FCT. The FCT provided annual information of investment and funding, allowing to calculate the expenditure on R&D sea projects of units whose activity was wholly or partly related to the sea. The methodology was the same used by Portuguese NA to calculate the national R&D.

Calculations of R&D output and GFCF were based on ESA 2010 regulation and manual (Box 9) as well as the Frascati manual, and followed the NA algorithms (Box 10).

Box 9 - Output of R&D - ESA 2010

According to ESA 2010 Manual, page 67:

*“3.82 **Research and development (R&D)** is creative work undertaken on a systematic basis to increase the stock of knowledge, and use of this stock of knowledge for the purpose of discovering or developing new products, including improved versions or qualities of -existing products, or discovering or developing new or more efficient processes of production. R&D of a significant size relative to the principal activity is recorded as a secondary activity of the local KAU. A separate local KAU is distinguished for R&D where possible.*

*3.83 **The output of R&D services is measured as follows:***

(a) R&D by specialised commercial research laboratories or institutes is valued at the revenues from sales, contracts, commissions, fees, etc. in the usual way;

(b) the output of R&D for use within the same enterprise is valued on the basis of the estimated basic prices that would be paid if the research were subcontracted. In the absence of a market for subcontracting R&D of a similar nature, it is valued as the sum of production costs plus a mark-up (except for non-market producers) for NOS or mixed income;

(c) R&D by government units, universities and non-profit research institutes is valued as the sum of the costs of production. Revenues from the sale of R&D by non-market producers of R&D are to be recorded as revenues from secondary market output.

Expenditure on R&D is distinguished from that on education and training. Expenditure on R&D does not include the costs of developing software as a principal or secondary activity.”

According to ESA 2010 Manual, page 68:

*“**Expenditure on R&D will be treated as fixed capital formation** when a sufficiently high level of reliability and comparability of the estimates by the Member States has been achieved;”*

A number of public academic institutions provide simultaneously high education sea courses and R&D services on the sea or sea related. In those cases the calculations were made for each institution considering both contributions individually.

Box 10 – Calculation procedure of R&D output and GFCF at SAS

The calculation procedure of sea R&D output and GFCF followed the Frascati manual indications and uses the same algorithms as for the NA. The following steps were considered:

1. Selection of the sea universe as defined in 3.3, using IPCTN data on personnel expenditures, other current expenditures, land expenditures and equipment expenditures, by entity;
2. Aggregation of data by institutional sector and NACE Rev.2 code;
3. Application of the NA algorithm for R&D calculations, by institutional sector:

1st step – Frascati Manual Intramural Expenditures on R&D (corresponds to the Total Expenses on R&D, by NACE Rev.2, aggregated from the IPCTN data):

$$\text{Total Expenses on R\&D} = \text{Current Expenses} + \text{Capital Expenses}$$

being

$$\text{Current Expenses} = \text{Personal Expenditures} + \text{Other Current Expenditures}$$

and

$$\text{Capital Expenses} = \text{Land Expenditures} + \text{Equipment Expenditures}$$

2nd step – Calculate Current Expenditures using the equation:

$$\begin{aligned} \text{Current Expenditure} = & \text{Frascati Manual Intramural Expenditures on R\&D} \\ & - \text{Expenditure on own account production of software (only for NACE 62 and 71)} \\ & - \text{Capital Expenditures} \\ & + \text{Extramural Purchases of R\&D that should be recorded as intermediate consumption} \\ & \quad \text{(only for NACE 72)} \end{aligned}$$

3rd step – Calculate Output of R&D using the equation:

$$\begin{aligned} \text{Output of R\&D} = & \\ & \text{Current Expenditures} + \text{Estimate of Consumption of Fixed capital plus a Return to capital} \\ & \quad \text{(for non market producers only Consumption of Fixed Capital)} \\ & + \text{Adjustment for Exhaustiveness} \end{aligned}$$

Note that the Adjustment for Exhaustiveness was calculated only for NACE Rev. 2, Division 72, assuming the Current Expenses figure for the set of units identified with sea projects in the FCT database, but did not respond to the IPCTN questionnaire.

4th step – Calculate Total GFCF of R&D using the equation:

$$\begin{aligned} \text{GFCF of R\&D} = & \text{Output of R\&D} + \text{Imports of R\&D} \\ & - \text{Extramural Purchases of R\&D that should be recorded as intermediate consumption} \\ & \quad \text{(only for NACE 72)} - \text{Exports of R\&D} \end{aligned}$$

Note that to calculate the sea Imports and Exports of R&D it was assumed the ratio of the Sea Expenses on R&D/Total expenses of R&D as a proxy for the share of the sea.

4.3.7. Imputed rentals of second homes

The methodology used to estimate the imputed rents was based on the appropriation and stratification of the Census 2011 (general survey of the population and housing), as used in National Accounts.

The methodology used makes it possible to infer, based on rent which was effectively paid, the rents to be imputed using a hedonic regression econometric model.

The model was estimated considering a vast set of attributes (337), namely in relation to location, size, accommodation type, kind of occupation and age.

For seasonal residence dwelling, the imputed rents followed the same methodological procedures to calculate the imputed rents. However, the fact that the dwelling was seasonally occupied meant that the rent was attributed for only a part of the year and not the entire year, as is the case with permanent houses.

After applying the model to the Census 2011 database all the dwellings were attributed an average monthly rental value. To determine the output of dwelling services the information derived from the use of the model was multiplied by 12 months (in the case of habitual residential housing) and by 3 months (for seasonal residential housing), thus obtaining a rental value per Nomenclature of Territorial Units for Statistics, Level 3 (NUTS 3) and according to type of occupation.

SAS only considered buildings in coastal areas and seasonal residential housing, therefore, only three months of rent were imputed to buildings located in coastal areas, all around the country.

In *Área Metropolitana de Lisboa* (Metropolitan area of Lisbon) and in *Área Metropolitana do Porto* (Metropolitan area of Oporto) coastal areas were identified with the help of external experts, due to the complexity of the real estate market in these cities, and to the vicinity of the sea (and the rivers) in both cases. In the rest of the country, only geographical criteria were used to identify the buildings included in the SAS estimation of imputed rents.

4.4. SAS supply and use tables

Building the supply and use tables (SUT) for the sea was the last phase of the SAS. It mainly consisted on the confrontation of all information obtained independently, for the establishment of its consistency. The SAS supply and use table is a subset of the national supply and use table and it followed the same building criteria, defined on ESA 2010.

According to EUROSTAT, ESA 2010, page 23, “*Supply and use tables show the whole economy by industry (e.g. motor vehicles industry) and products (e.g. sports (or sea) goods). The tables show links between components of GVA, industry inputs and outputs, and product supply and demand. Supply and use tables link different institutional sectors of the economy (e.g. public corporations) together with detail of imports and exports of goods and services, government expenditure, household and NPISHs expenditure and capital formation.*

Producing supply and use tables allows an examination of consistency and coherence of national accounts components within a single detailed framework and, by incorporating the components of the three approaches to measuring GDP (i.e. production, income and expenditure), enables a single estimate of GDP to be determined.

When balanced in an integrated manner, supply and use tables also provide coherence and consistency in linking the components of the following three accounts:

- (1) goods and services account;*
- (2) production account (by industry and by institutional sector); and*
- (3) generation of income account (by industry and by institutional sector)”.*

This final phase of the SAS work complemented the previous validation steps between intermediate results. Effectively, these were systematically confronted, leading to partial arbitration proceedings. The balance between supply and use of the sea products was also used as an indirect method to calculate the coefficients for partially sea units. The detailed delimitation of 2010 and 2011 universes was preceded by a simpler exercise for 2012 universe, and a preliminary version for 2013.

SUT follow the compilation of economic variables from the income account by institutional sector, industry and group:

- Output of sea or sea related products, by National Accounts Product Classification (NPCN);
- Output at basic prices, by industry NRCN Base 2011 (these being measured and reconciled with detailed values of the NA);
- Intermediate consumption valued at purchasers' prices;

- Satellite Account for the Sea' GVA;
- Compensation of sea employees;
- Other taxes on sea production;
- Other subsidies on sea production.

For each year of the SAS, from 2010 to 2012, simplified SUT were subsequently prepared for the sea or sea related products by group (Figure 18), with reference to the national SUT of the PNA, that include 127 industries X 433 products. They followed the rules of ESA 2010 (Box 10).

To fill in these tables it was necessary to calculate several variables, by sea or sea related product. Whenever the detail of data sources has allowed, these data were obtained through their direct incorporation, in order to minimize the use of applying coefficients.

Thus, to obtain the **sea resources** (supply) by product NPCN Base 2011 at purchasers' price, besides the output of sea products at basic prices, the following variables were estimated for the sea products:

- Imports;
- Trade and transport margins;
- Taxes on products (with a positive sign), subdivided between VAT and Other taxes on products;
- Subsidies on products (with a negative sign).

The **sea uses** by product were obtained through the calculation of the following variables:

- Final consumption expenditure by: households, general government and NPISH;
- Gross capital formation;
- Exports;
- Intermediate consumption of sea products, at purchaser prices.

Box 11 - Supply and use tables (SUT) - ESA 2010

ESA 2010 (page 276) refers the following:

“In the supply and use tables the following identities apply:

(a) for each industry, output equals intermediate consumption plus gross value added;

(b) for each product, supply equals the sum of all uses, shown in balanced rows in the supply and use framework.

Accordingly, **for each product:**

supply at purchasers' prices is equal to

output of the product at basic prices

plus imports at basic prices

plus trade and transport margins

plus taxes less subsidies on products

which is equal to use of the product at purchasers' prices, which is equal to

intermediate demand for the product

plus final consumption expenditure

plus gross capital formation

plus exports.

At the level of the total economy, total intermediate demand is equal to total intermediate consumption, trade and transport margins sum to zero over the whole economy as they are matched by the output of the margin industries, and so this identity can be stated as:

$$\text{output} + \text{imports} + \text{taxes on products less subsidies on products} = \text{Intermediate consumption} + \text{final consumption} + \text{gross capital formation} + \text{exports}$$

therefore

$$\text{output} - \text{intermediate consumption} + \text{taxes on products less subsidies on products}$$

$$= \text{final consumption} + \text{gross capital formation} + \text{exports less imports}$$

which shows the equivalence of the production and expenditure approaches to measuring GDP;

*(c) gross value-added is the difference between output and intermediate consumption by industry. It is identical to the sum of the incomes generated. So **gross value-added equals the sum of compensation of employees, consumption of fixed capital, net operating surplus/mixed income, and other taxes less subsidies on production.** This enables the consistency of the income approach to measuring GDP to be checked with the production approach.*

As a first step, the GVA calculation by group was made through the SUT, as well as the gross operating surplus by group. It was in the context of the balance between supply and use (supply and demand) for each specific product, that important decisions with an impact on determining the final GVA and its components were taken. In a second phase, the accounts of each institutional sector and the respective balances were analyzed.

After the stabilization of the results for 2010, 2011 and 2012, estimates were made for 2013 without the analysis of the entire universe, but using detailed information for some of the most

relevant entities (e.g. R&D units), foreign trade and the application of detailed coefficients from the NA.

For each year in the SAS the values for the variables were checked in order to ensure a balance between supply and use. The confrontation and comparative analysis with detailed NA data, by sector and by product, originated sometimes the revision and/or correction of the initial estimates. Beyond this exercise, additional comparisons between the values of the variables have been made, in the four years period, so that one could validate the appropriateness of certain ratios and/or coefficients.

4.4.1. Sea resources (supply)

4.4.1.1. Foreign trade estimation - imports

With regard to Foreign Trade, the main data sources used to estimate the sea products foreign trade was the NA data, the Statistics Portugal's Foreign Trade database, the SBI/IES and the Balance of Payments from *Banco de Portugal*.

In a first phase, NA data were used directly for the products considered totally sea. For the other cases, in order to determine the sea fraction of External Trade, the classification of international trade statistics was studied in detail. Whenever the classification allowed to determine the share (or fraction) related to the sea, information of the respective flows to economic activity units that made up the SAS universe was appropriated (for example, the detail of the Combined Nomenclature (CN) for fishing nets allowed the appropriation of information on imports and exports of ropes and nets). Whenever the detail of nomenclature was not enough to determine what fraction would be sea, the economic activity units of the SAS universe were studied, identifying the cases that would be more relevant and/or that would be specifically related to the sea, considering only the trade flows of these units (e.g. in the case of "other electrical equipment", only imports and exports of units specifically related to the sea were identified).

In the context of foreign trade, the final consumption expenditure of residents outside the national economic territory associated with hotels, restaurants and similar services and travel agency services, tour operators and other reserves and related services, were also considered as imports. The estimate for SAS was based on the Households Budget Survey (HBS/IDEF) structures and on the production structures of these products, calculated in the SAS compilation. Similarly, it were considered as exports the final consumption expenditure of non-residents in national economic territory associated with the hotel establishments services, restaurant and similar services and travel agency services, tour operators and other reservation and related services. It was adopted the same line of methodological operation that has been applied to

imports of these products. Consequently, household's consumption expenditures of these products are compliant with the residence principle.

When it was not possible to determine which part (or fraction) of foreign trade related to the sea for the KAU from SAS universe, no imports or exports were considered.

4.4.1.2. Commerce/trade and transport margins estimation

In the particular case of commerce (NACE Rev. 2 code Division 46 and 47), output is determined by combining the information on margin rates (retail and wholesale), product by product, with the information in the business database. Output of product commerce is the sum of all trade margins. It was established a correspondence between product/group and the output (sum of trade margins of each product was imputed to the respective group). SAS assumed the trade margins estimated by Portuguese NA. Afterwards, Intermediate consumption and Compensation of Employees were estimated applying the technical coefficients observed by the commerce units in the universe.

Trade margins (and transport margins) were identified as resources (national output and imports), imputed to the respective products and broken down according to the various uses. Thus, the output for NACE Rev. 2 code Divisions 46 and 47 is the sum of the trade margins estimated for the various sea products.

4.4.1.3. Taxes on products estimation

Taxes on products (D.21) are subdivided into VAT (D.211) and Other taxes on products except VAT (D.212 + D.214).

$$D.21 = D.211 + D.212 + D.214$$

with

D.211 = value added type taxes (VAT)

D.212 = taxes and duties on imports excluding VAT

D.214 = taxes on products, except VAT and import taxes

VAT (D.211) was estimated applying the ratios, of SAS coefficient of product i produced plus imported in NA to the D.211 level of National Accounts (NA), by product i .

$$D.211 = \sum_i \{ D.211(NA)_i * \left(\frac{P.1(SAS)_i + M(SAS)_i}{P.1(NA)_i + M(NA)_i} \right) \}$$

with

D.211(NA)_i= value added type taxes (VAT) from National Accounts, for product i

P.1(SAS)_i= output from SAS, for product i

M(SAS)_i= imports from SAS, for product i

P.1(NA)_i= output from National Accounts, for product i

M(NA)_i= imports from National Accounts, for product i

For other components of D.21 only D.212 is estimated, in general. D.214 is commonly null at SAS, once the only D.214 applied is the consumption tax on petroleum products. So, the general algorithm for estimating D.212 applies the SAS coefficient of product i imported, in the total NA level of product i imports, to the D.212 level of National Accounts (NA), by product i.

$$D.212 = \sum_i \{D.212 (NA)_i\} * \left(\frac{M(SAS)_i}{M(NA)_i} \right)$$

with

D.212(NA)_i= taxes and duties on imports excluding VAT from National Accounts, for product i

M(SAS)_i= imports from SAS, for product i

M(NA)_i= imports from National Accounts, for product i

Specifically on petroleum products, the subset “Other taxes on products except VAT (D.212 + D.214)” is estimated together, applying the SAS coefficient of product i imported in the total NA level of product i imports, to the D.212 + D.214 level of National Accounts (NA), by product i.

$$D.212 + D.214 = \sum_i \{D.212 (NA)_i + D.214 (NA)_i\} * \left(\frac{P.1(SAS)_i + M(SAS)_i}{P.1(NA)_i + M(NA)_i} \right)$$

with ,

D.212(NA)_i= taxes and duties on imports excluding VAT from National Accounts, for product i

D.214(NA)_i= taxes on products, except VAT and import taxes from National Accounts, for product i

P.1(SAS)_i= output from SAS, for product i

M(SAS)_i= imports from SAS, for product i

P.1(NA)_i= output from National Accounts, for product i

M(NA)_i= imports from National Accounts, for product i

4.4.1.4. Subsidies on products estimation

Subsidies on products (D.31) were estimated applying the output ratios between SAS and NA, to the D.31 level of National Accounts (NA), by product i.

$$D.31 = \sum_i D.31 (NA)_i * \left(\frac{P.1(SAS)_i}{P.1(NA)_i} \right)$$

with

D.31(NA)_i= subsidies on products from National Accounts, for product i

P.1(NA)_i= output from National Accounts, for product i

P.1(SAS)_i= output from SAS, for product i

4.4.2. Sea uses

4.4.2.1. Final consumption expenditure by: households, general government and NPISH

The Final consumption expenditure definition, according to ESA 2010 “*consists of expenditure incurred by resident institutional units on goods or services that are used for the direct satisfaction of individual needs or wants or the collective needs of members of the community.*” It is calculated by institutional sector according to the definitions described in [Annex V](#).

- Final consumption expenditure (P.3) by households

The primary data is obtained from the HBS/IDEF and the definition of households final consumption expenditure is described in ESA 2010, page 70 ([Annex 5](#)).

In the case of products totally considered for sea uses, SAS used the Final consumption expenditure by product from the NA. A thorough analysis was made to the final consumption of the households by objective (HBS/IDEF) and those uses considered sea or sea related, were considered. For the other products the ratio between the Final consumption expenditure and the output for the whole economy was considered as a proxy for the sea share, applied to the sea output figures.

- Final consumption expenditure (P.3) by government

According to EUROSTAT, ESA 2010, page 71, “*Final consumption expenditure (P.3) by government includes two categories of expenditures: (a) the value of the goods and services*

produced by general government itself (P.1) other than own-account capital formation (corresponding to P.12), market output (P.11) and payments for non-market output (P.131); (b) purchases by general government of goods and services produced by market producers that are supplied to households, without any transformation, as social transfers in kind (D.632). General government pays for these goods and services that the sellers provide to households”.

Conceptually:

$$P.3 = P.13 - P.131 + D.632$$

where

P.13 – Non-market output

P.131 – Payments for non-market output

D.632 – Social transfers in kind — market production purchased by general government and NPISH.

In the cases where the product was fully considered a sea product (such as fish or maritime transport), the final consumption expenditure (P.3) by government corresponded to the value obtained by the NA final consumption expenditure (P.3) by government, for the product concerned. In other cases, the above formula was applied to the entity/KAU.

- **Final consumption expenditure (P.3) by NPISH**

The definition of NPISH final consumption expenditure is described in ESA 2010, page 71 ([Annex 5](#)).

4.4.2.2. Gross Fixed Capital Formation (GFCF) estimation

ESA 2010 (pages 73-74) defines Gross fixed capital formation (P.51g) ([Annex V](#)).

“3.124 Definition: gross fixed capital formation (P.51) consists of resident producers’ acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realized by the productive activity of producer or institutional units. Fixed assets are produced assets used in production for more than one year.”

The types of gross fixed capital formation that can be distinguished are on Box 12.

GFCF by product was obtained from the National Accounts’ GFCF matrix for the products totally considered for sea uses. The primary data for the institutional sectors S.11 and S.14 was obtained from the SBI/IES.

Box 12 - Types of gross fixed capital formation - ESA 2010

According to ESA 2010 manual, page 74:

“3.127 The following types of gross fixed capital formation are distinguished:

- (1) dwellings;*
- (2) other buildings and structures; this includes major improvements to land;*
- (3) machinery and equipment, such as ships, cars and computers;*
- (4) weapons systems;*
- (5) cultivated biological resources, e.g. trees and livestock;*
- (6) costs of ownership transfer on non-produced assets, like land, contracts, leases and licenses;*
- (7) R&D, including the production of freely available R&D. Expenditure on R&D will only be treated as fixed capital formation when a high level of reliability and comparability of the estimates by the Member States has been achieved;*
- (8) mineral exploration and evaluation;*
- (9) computer software and databases;*
- (10) entertainment, literary or artistic originals;*
- (11) other intellectual property rights.”*

Among these items (2), (3) and (7) were the most relevant for SAS.

Some particular cases were analyzed, by their importance for the sea uses, namely the investments in fishing ports, commercial ports, dredging and coastal protection and defence works. This set of investments was considered as GFCF in product 42 – Constructions and construction works for civil engineering. They include the industries considered totally sea: NACE Rev. 2 codes 03 – Fishing, 50 – Water transports and 5222 – Services activities incidental to water transportation, which data was compiled from the National Accounts' GFCF. Regarding the construction works partially considered sea or sea related, a thorough analysis was made on the Public Works Observatory (OOP) yearly databases. A search by contracting and awarding entities allow the selection of the contracts regarding coastal protection and defence works, dredging and other projects related to sea works. The contractual value was assumed as the total investment and weighted by the contract period (from the date of contract signature on), to obtain the investment by project and by year.

GFCF for R&D was obtained as previously described in point 4.3.6., Box 10, and assumed in product 72 – Scientific research and development services.

For the other products considered partially sea or sea related, the GFCF was calculated assuming, as a proxy, the ratio of the total GFCF for the economy over the output for the whole economy for the sea, applied to the sea output by product.

4.4.2.3. Foreign trade estimation - exports

The same text as for 4.4.1.1., on foreign trade estimation – imports, applies to the exports.

4.4.2.4. Intermediate consumption of sea products, at purchaser prices, by group

The Intermediate consumption of sea products, at purchaser prices (P.2) was calculated by institutional sector and by group as described in the methodology by institutional sector, on point 4.3.

4.4.3. Employment estimation

According to ESA 2010, page 311, employment has the following definition:

“§11.32 Definition: full-time equivalent employment, which equals the number of full-time equivalent jobs, is defined as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory.”

In the context of the SAS elaboration, it was considered relevant to assess the relative importance of the sea in terms of employment. Similar to the methodology adopted for the monetary variables, the estimate of employment followed the NA approach.

Although different statistical approaches can be used to estimate the sea employment, it was considered that the NA methodology would be the one that would provide a better measure for the labour input.

The sea employment estimates for the years 2010-2013 consisted in the calculation of the Full Time Equivalent (FTE), paid and unpaid, of industries and groups.

FTE was used as a measure of employment, as an alternative to jobs and individuals. It was considered more appropriate to compare with the associated output, as it has underlying the amount of hours actually worked.

For this purpose it were used the ratios of output and compensation of employees per FTE, by industry and institutional sector of the NA, at the most detailed level.

The SAS information on the output and compensation of the employees, available by industry, institutional sector and group, was converted in FTE by employees and self-employees, according to the following ESA 2010 definition (EUROSTAT (2013), ESA 2010, pages 307-308.):

“§11.12 Definition: *employees are defined as persons who, by agreement, work for a resident institutional unit and receive a remuneration recorded as compensation of employees*”.

“§11.15 Definition: *self-employed persons are defined as persons who are the sole owners, or joint owners, of the unincorporated enterprises in which they work, excluding those unincorporated enterprises that are classified as quasi-corporations. Persons having both an employee job and a job as a self-employed person are classified here if the self-employed job constitutes their principle activity by income.*”

In the case of the institutional sectors of non-financial corporations (S.11), households (S.14) and financial corporations (S.12) it was used the National Accounts' FTE/output ratio; in the case of the general government (S.13) and NPISH (S.15), it was used the National Accounts' FTE/compensation of employees ratio, in both cases by industry. This option took into account the fact that the compensation of employees is an important component of the respective output of general government and NPISH, since almost all of their production relates to non-market output, which is valued by its costs and where wages have a significant weight.

The calculation of employment and subsequent analysis (temporal and structure) allowed to validate the resulting estimates of sea SUT and, if necessary, revise previous estimates.

In summary, the SAS results do not correspond to the sum of information available for each unit/KAU selected for the final SAS universe. The results have a macroeconomic nature and were estimated in accordance with the best methodological practices, adjusted to the national reality, to the available data sources, and to the ESA 2010 rules, that are consistent with the PNA (benchmark-year 2011).

5. The use of SAS to support policy measures

5.1. National context

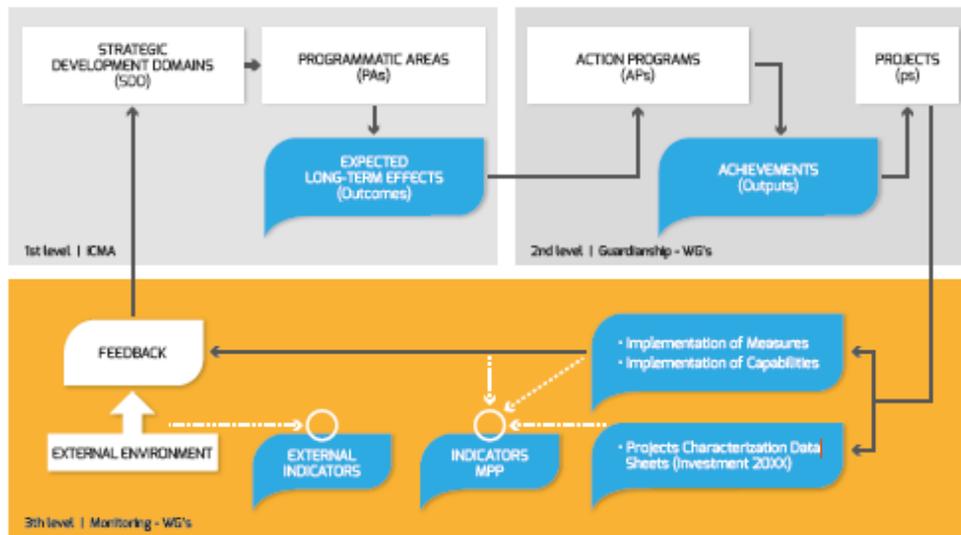
5.1.1. National Ocean Strategy 2013-2020 and Mar-Portugal Plan

The National Ocean Strategy 2013-2020 is the public policy umbrella for the maritime issues and the blue growth agenda in Portugal. The long term objectives established in NOS 2013-2020 are:

- To promote a modern national maritime entrepreneurship identity;
- To achieve the economic, geopolitical and geostrategic potential of its action plan Mar-Portugal;
 - To attract national and international investment;
 - To promote growth, employment, social cohesion and territorial integrity;
- To increase, by 2020, the direct contribution of the ocean economy to the national GDP by 50%;
- To strengthen national scientific and technological capacity;
- To promote Portugal, globally, as a maritime nation and as a key player of the Integrated Maritime Policy (IMP) and the European Union Maritime Strategy for the Atlantic (EUMSAA).

As established, “the implementation of the NOS 2013-2020 will be subject to constant monitoring and evaluation, to allow for measuring the extent to which the set objectives are pursued, on one hand, and to ensure its review and update, whenever there are significant changes to context that justify it, on the other”. This monitoring includes an external indicator’s analysis that encompasses context and results indicators as well as indicators from the action plan implementation (Figure 19).

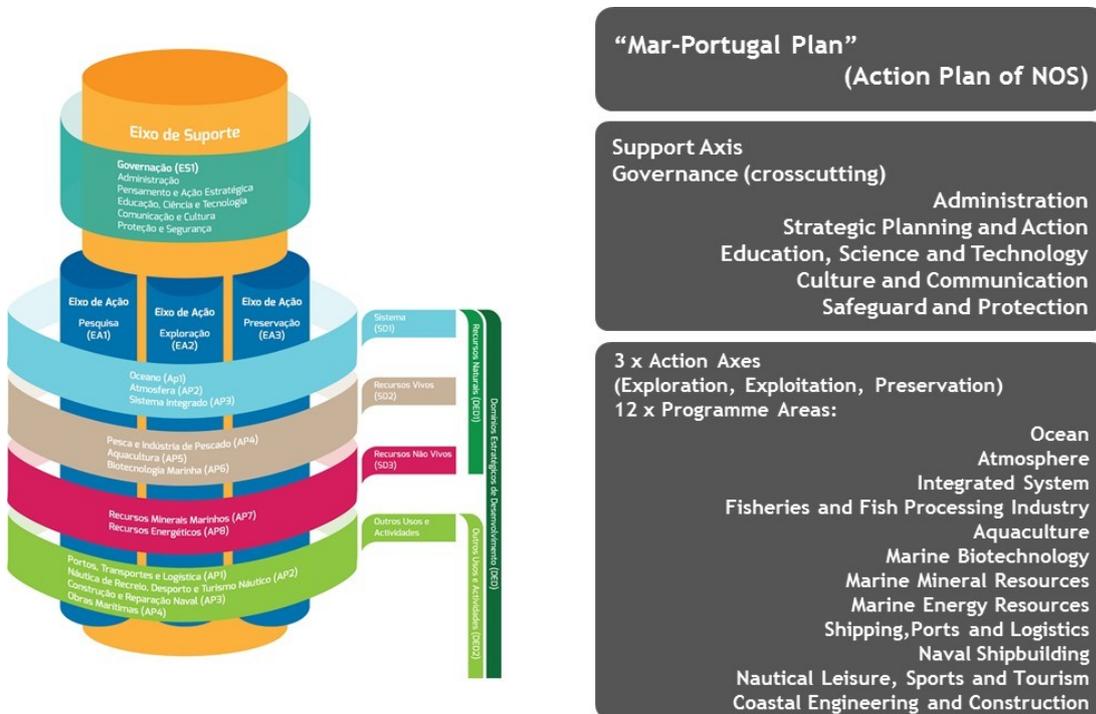
Figure 19 - Portuguese NOS 2013-2020, monitoring, evaluation and review framework



Source: NOS, 2013-2020

The NOS Action Plan, entitled “Mar-Portugal Plan” (MPP), is organized according Program Areas (PA) and a support axis related with governance crosscutting issues (Figure 20).

Figure 20 - “Mar-Portugal Plan” (MPP) structure



Source: NOS, 2013-2020

SAS is a very important instrument to monitor NOS 2013-2020 performance in the long term, namely to measure the weight of the sea economy and to follow the structural changes due to sea related activities. For inter-sectorial analysis, considering public and private bodies, the SAS' National Accounts underlying basis is the preferential way to coherently support the blue growth studies and comparisons.

Table 4 shows the relation between the different strategic development domains adopted in the NOS 2013-2020 and the nine groups considered in SAS.

Table 4 - Crosscutting table between SAS and NOS 2013-2020

SAS Groups of activities	NOS 2013-2020 – Strategic Development Domains				Governance
	Living resources	Non- living resources	Infrastructures, Uses and Activities		
			Industry	Services	
1. Fisheries, aquaculture, processing wholesale and retail of its products	X			X	X
2. Non-living resources		X			
3. Ports, transports and logistics				X	X
4. Recreation, sports, culture and tourism				X	
5. Shipbuilding, maintenance and repair			X		
6. Maritime equipment			X		
7. Infrastructures and maritime works			X		
8. Maritime services				X	X
9. New uses and resources of the ocean	X	X	X		

There is a two-way relation between SAS' groups and NOS 2013-2020, except for the cases of groups 1, 3, 8 and 9. Groups 1 and 3 include the public administration bodies directly related to the groups activities' governance as they are, normally, dedicated only to those activities. Group 1 also includes the commercial entities dedicated to fisheries (wholesale and retail). Group 8 is a crosscutting activities' group, which includes all public administration bodies and commercial entities that provide services to all other groups, except the ones already included in groups 1 and 3. Finally, group 9 includes new fields of work divided between three NOS 2013-2020' domains. For the crosscutting services group 8, it could be interesting to split between public administration bodies and commercial entities as two separate sub-groups. Group 9 activities have modest economic results for now and include areas deeply related with I&D. A broader analysis would require complementary indicators that do not result from NA, but that would enrich the NOS monitoring.

In what concerns the geographical scale, NOS 2013-2020 is National, but the respective MPP is divided and considers Continent, Azores and Madeira. For now, SAS does not make this disaggregation.

Considering that SAS results had a time-lag of 23 months to be available, relatively to the year in course, other economic indicators, or physical indicators strongly correlated with economic performance, are needed for sectorial short-term analysis.

National legislation envisages a mechanism to monitor and to assess the contribution of European Structural & Investment Funds for the ocean, having in mind the objectives of the NOS 2013-2020. The SAS results would also support this analysis. Considering the seven regional Operational Programmes (OP) for the five Portuguese Continental regions at NUTS 2 level, all with a coastal border, plus two autonomous regions, Azores and Madeira, it would be important to admit the possibility of SAS regional results in the future.

5.2. International context

5.2.1. Integrated Maritime Policy and Blue Growth in European Union

The ocean economy is in the National and International Agendas, being relevant for growth and prosperity of our society. At the same time, marine environment has to be protected, human pressures and their potential marine impacts have to be assessed, and programmes of measures and monitoring must be implemented. In this overall framework the ocean economy assessment plays an important role and instruments such as the Satellite Account for the Sea present an opportunity to perform long-term macroeconomic analysis that guarantees coherence and international comparability.

The year of 2007 was noticeable by the publication of the “Blue Book”, in which the European Commission (EC) proposed an IMP for the European Union. It was recognized the need for an integrated and an inter-sectorial approach, considering that a compartmentalized policy development and decision-making was no longer adequate.

The IMP, as proposed in 2007, was anchored in the Lisbon Agenda for jobs and growth and was focused in a wide range of sectors: shipbuilding and shipping, ports and fisheries, offshore energy (including oil, gas and renewables), coastal and maritime tourism, exploitation of mineral resources, aquaculture, blue biotech and sub-sea technologies. It was also considered important the recreational, aesthetic and cultural uses humankind make of the seas and the ecosystem services they provide.

At that point in time it was recognized that “the need for improved socioeconomic data on the maritime sectors and coastal regions is also clear as difficulties in obtaining this information are limiting the ability of regional stakeholders to develop rational, long term plans and investments”. In response to this, the “Blue Book” proposed to develop “by 2009 a database on socioeconomic data for maritime sectors and coastal regions”.

In October 2012 a Communication from the Commission established that the Blue Economy integrated individual sectors which are interdependent, rely on common skills and shared infrastructure such as ports and electricity distribution networks and depend on others using the sea sustainability. This Communication presents the blue economy characterization using a group of value chains and two main indicators: Gross Value Added and employment.

During the Cyprus Presidency of the Council of the European Union in 2012 the European Ministers responsible for the IMP and the European Commission signed, in September, a Declaration on a Marine and Maritime Agenda for growth and jobs, the “Limassol Declaration”. This Declaration:

- “Stress that the Europe 2020 strategy should be backed by a dynamic agenda for seas and oceans that supports the growth, competitiveness and job-creating potential towards a sustainable blue economy;
- Call on European Institutions to support sustainable development of marine and maritime activities in the context of the multiannual Financial Framework 2014-2020, i.e. within the framework of the Cohesion Policy, without prejudice to the outcome of the ongoing negotiations;
- Support the appropriate development and implementation of integrated sea basin and macro-regional strategies as important platforms to drive sustainable growth in coastal regions”.

In 2011 the EUMSAA was published, followed, in 2013, by the respective Action Plan for delivering smart, sustainable and inclusive growth.

To follow the progress of the IMP and the EUMSAA implementation, DG MARE performed several studies along the time. Although the objective of these studies was not the suggestion of a statistical instrument or the analysis of the constraints faced by the Member States in monitoring the blue economy, they were considered as references in the SAS design, as mentioned before. In this respect the SAS, as designed and presented in this report, is a step ahead, as it is the result of the efforts made by the Portuguese organizations’ representatives in EUROSTAT and in the European IMP. At a national level the direct contact with economic agents and sectorial representative organizations made more confident the results found for sectors that are not entirely dedicated to marine or maritime activities.

The nine groups or value chains considered in SAS, respect the context of the blue economy initiative launched by the EC and are considered valuable for their monitoring, as it can be seen in Table 1.

5.2.2. Marine Strategy Framework Directive in European Union

The European IMP encompasses the protection and sustainable use of marine waters and marine resources and the Marine Strategy Framework Directive (MSFD) is considered its environmental pillar. The main objective of the MSFD is to achieve or maintain good environmental status in the marine environment by the year 2020 at the least.

A simplified step by step implementation process of the MSFD includes:

- An initial assessment that includes “an economic and social analysis of the use of those waters and the cost of degradation of the marine environment”. Member States shall, by means of a coordination defined in the MSFD, that includes the coordination within the Regional Sea Conventions, make every efforts to ensure that assessment methodologies are consistent across the marine region or sub-region;
- The determination of good environmental status and the establishment of environmental targets to guide progress towards achieving the good environmental status. The marine strategies to be developed shall include a monitoring programme for ongoing assessment and regular updating of targets. Targets establishment shall take into consideration social and economic concerns among other issues;
- The implementation of a set of measures that need to be taken in order to achieve or maintain good environmental status in the marine waters. According the MSFD these measures could include economic incentives. The Directive establishes that Member States shall give due consideration to sustainable development and, in particular, to the social and economic impacts of measures envisaged when drawing up the programme of measures.

These elements all together constitute the marine strategies to be developed and implemented by Member States under the MSFD. Nevertheless the Directive refers that Member States shall not be required, except in respect of the initial assessment, to take specific steps where there is no significant risk to the marine environment, or where the costs would be disproportionate taking into account the risks to the marine environment, and providing that there is no further deterioration.

The socioeconomic analyses plays a significant role in the MSFD implementation process, as presented before, and the coordination, in particular within each region or sub-region, is important to guarantee consistent results and a good environment status at that geographic level.

Portugal is located on the North–East Atlantic Ocean, and in two sub-regions:

- The Bay of Biscay and the Iberian Coast;
- In the Atlantic Ocean, the Micronesian bio geographic region, more specifically the waters surrounding the Azores and the Madeira.

The Working Group on Economic and Social Assessment (WG ESA), running under the umbrella of the Common Implementation Strategy of the MSFD, developed a non-legally binding document to support the consistency of the initial assessment (WG ESA document).

The WG ESA document identifies different methodologies available for the economic assessment. One of them is the Marine Water Accounts Approach based on the System of National Accounts, making use of the experience derived from the Water Account's Approach considered for the Water Framework Directive. As mentioned in the WG ESA document, the "Marine Water Accounts are based on the regional economic accounts. These give quantitative description of the economic processes in the various regions in the country in such a way that the economic processes can be linked to the national accounts."

The WG ESA document considers the following activities as potentially relevant when identifying the economic sectors that use marine waters:

- Aquaculture and mariculture;
- Shipping construction and transport;
- Coastal defence and flood protection;
- Defence – Military;
- Fisheries;
- Tourism;
- Mining (gravel, sand and shell extraction);
- Oil and gas;
- Cables (e.g. Power transmission, Telecommunications, Pipelines – interconnectors);
- Renewable energy (e.g. wind farms);
- Storage (of gases e.g. CO₂, CCS);
- Water abstraction;
- Water transport;
- The use of the marine water for waste and wastewater disposal (agriculture, industry, households etc.);
- Supporting infrastructure (e.g. ports, marinas, navigation aids).

Excluding water transport (considering passenger and freight transport as part of shipping definition) and the use of the marine water for waste and wastewater, all the other activities are included in SAS. It is possible to identify which NACE Rev. 2 codes to consider, split by the ones related with activities that operate directly in marine waters or the whole related value chain.

The economic and social analysis of the use of marine waters in the MSFD shall consider the link between human activities and human pressures on marine environment, and the impacts of these pressures on human beings. In these respect not all economic activities considered in blue economy definition would be relevant in the MSFD context (for example activities that would take

place far from coast zone and are not potentially related with pressures and impacts in marine waters). Nevertheless, if sectors which depend on marine ecosystems goods and services and the ones that are potentially affected by damages on marine ecosystems were considered, a broader analysis of marine water use would be useful and more blue economy sectors would be included.

Other activities were identified in the WG ESA document as potentially relevant, and the majority is in the SAS borders, although included in a broader definition:

- Bathing;
- Sport fishing;
- Scuba diving;
- Other recreational activities linked to the marine areas.

This document identifies the following potential indicators for assessing use values for these sectors:

- Value added;
- Production value;
- Income;
- Employment.

5.2.3. Convention for the Protection of the Marine Environment of the North-East Atlantic and other Regional Sea Conventions

The four European Regional Sea Conventions are:

- The Convention for the Protection of the Marine Environment in the North-East Atlantic, the OSPAR Convention (OSPAR)
- The Convention on the Protection of the Marine Environment in the Baltic Sea Area, the Helsinki Convention (HELCOM)
- The Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean, Barcelona Convention (UNEP-MAP)
- The Convention for the Protection of the Black Sea, the Bucharest Convention.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) entered into force on the 25 March 1998. The Contracting Parties are Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom, together with the European Union.

The OSPAR region corresponds to three of the regions identified within the Northeast Atlantic Ocean under Article 4 of the MSFD:

- The Greater North Sea, including the Kattegat, and the English Channel;
- The Celtic Seas;
- The Bay of Biscay and the Iberian Coast.

In 2013 OSPAR published a strategic report for the Regional Economic and Social analysis that identified some potential barriers that reduce the accuracy of a collated OSPAR-region WG ESA report and restrict its potential future usefulness to informing marine management measures and proposing new ones.

Some of the identified barriers were:

- “Different types of data (i.e. monetary, quantitative, and qualitative) will pose difficulties to creating a harmonized assessment. Moreover, varying quantitative/economic data types such as turnover and value added are also not directly comparable”;
- “The coverage of economic sectors in the country WG ESA reports differ significantly, with a wide range of sectors defined, only three of which (commercial sea fisheries, Ports and shipping, and recreation) are common to all countries. Some sectors are included in the majority of countries with understandable absences in others. Some sectors’ omissions from some country reports, however, reflect important differences in how countries choose to classify their activities.”

A series of recommendations were presented. It was considered that the “approaches taken need to consider requirements across all sectors, and bear in mind the limited resources available for, and opportunity costs of, undertaking any additional work”. It was included in the recommendations the need to identify options for coordination on methodological issues (e.g. definitions used by national statistical offices). Some examples were given:

- “Adopt common terminology for the same or similar marine sectors and activities (e.g. navigation is described in different ways by different countries);
- Adopt a common format for reporting definitions of marine sectors and activities (i.e. share the parameters through which definitions are made). For example, marine tourism accommodation may often be described by distance to the coast”.

Some of these suggestions were accommodated in the SAS work and this report presents an opportunity to go further in the discussion about economic data and economic analysis in the OSPAR context.

The sectors covered by the OSPAR 2013 document were those reported for enough countries to give a reasonable picture of activity in the OSPAR region namely:

- Commercial sea fisheries;
- Recreation & Tourism
- Ports and shipping;
- Aquaculture;
- Oil and gas;
- Renewable energy;
- Aggregate extraction;
- Submarine cable setting and maintenance.

All these activities are considered in the SAS universe. Without a SAS, it would be more difficult to provide comparable and reliable figures because it would be expected to obtain direct information just for commercial sea fisheries (NACE Rev. 2 Class Code 03.11), aquaculture (NACE Rev. 2 Class Code 03.21) and shipping (NACE Rev. 2 Codes 50.10, 50.20, 50.30, 50.40 and 77.34) from the national or European statistical offices (see Table 5).

Table 5 - NACE Rev. 2 class codes with a total inclusion in SAS

NACE Rev. 2 Class Codes with a total inclusion level in SAS	
Commercial sea fisheries and Aquaculture	03.11 Marine fishing 03.21 Marine aquaculture 10.20 Processing and preserving of fish, crustaceans and molluscs 47.23 Retail sale of fish, crustaceans and molluscs in specialised stores (03.12 Freshwater fishing) (03.22 Freshwater aquaculture)
Ports and shipping	50.10 Sea and coastal passenger water transport 50.20 Sea and coastal freight water transport 77.34 Renting and leasing of water transport equipment 52.22 Service activities incidental to water transportation (50.40 Inland freight water transport)
Shipbuilding, maintenance and repair	30.11 Building of ships and floating structures 30.12 Building of pleasure and sporting boats 33.15 Repair and maintenance of ships and boats
Recreation, sports, culture and tourism	50.30 Inland passenger water transport 50.40 Inland freight water transport

It would also be possible to obtain some insights on Recreation & Tourism considered in OSPAR report, considering results from the Tourism Satellite Accounts and the geographic criteria adopted in this report for Group 4 - Recreation, Sports, Culture and Tourism. The shipbuilding and maintenance and repair are not considered within OSPAR report but it is possible to consider NACE Rev. 2 codes with total inclusion on the SAS.

The indicators will correspond to national figures that do not match necessarily to the OSPAR region. Because of this, proxy's' use would be necessary, including in what concerns Portuguese figures.

This discussion about the opportunity of SAS use, in the OSPAR framework, would be also useful for the other European Sea Conventions, although the main activities and the most significant environmental problems could be different.

5.2.4. United Nations World Ocean Assessment

The Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects (the Regular Process) is recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis, by providing regular assessments at the global and supra-regional levels and by giving an integrated view of environmental, economic and social aspects.

The objective of the Regular Process is “to improve understanding of the oceans and to develop a global mechanism for delivering science-based information to decision makers and public”⁴. And the overall objective, endorsed by the United Nations General Assembly in UNGA⁵ Resolution 64/71 (2009), paragraph 177, is that:

- “The regular process under the United Nations would be recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis by providing regular assessments at the global and supra-regional levels and an integrated view of environmental, economic and social aspects;
- Such assessments would support informed decision-making and thus contribute to managing, in a sustainable manner, human activities that affect the oceans and seas, in accordance with international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments and initiatives;
- The regular process would facilitate the identification of trends and enable appropriate responses by States and competent regional and international organizations;
- The regular process would promote and facilitate the full participation of developing countries in all of its activities. Ecosystem approaches would be recognized as a useful framework for conducting fully integrated assessments”⁶.

⁴ http://www.worldoceanassessment.org/?page_id=6#THE BASICS

⁵ United Nations General Assembly

⁶ http://www.worldoceanassessment.org/?page_id=6#THE BASICS

The first cycle of the Regular Process (2010 to 2014) produces the First Global Integrated Marine Assessment (World Ocean Assessment) and its summary had been issued as document A/70/112 in June 2015. The report includes an analysis of some sectors, namely:

- Capture fisheries;
- Aquaculture;
- Seaweeds;
- Shipping;
- Ports;
- Submarine cables and pipelines;
- Offshore hydrocarbon industries;
- Other marine-based energy industries;
- Offshore mining industries;
- Marine debris;
- Tourism and recreation;
- Desalinization;
- Use of marine genetic resources
- Marine scientific research.

Lessons learned from the First Cycle of the Regular Process consider the need to include more data on socioeconomic aspects and also the need for more diversity in the professional backgrounds of the Experts Group members, in particular economic and social aspects expertise, alongside the knowledge on marine science.

For the second cycle the methodology proposed by the SAS could provide some support to include comparable and integrated analysis of ocean economy, the activities that depend on the ocean goods and services and the value chains which they belong to. It should be underlined that the SAS follows the European System of National Accounts which is consistent with the worldwide guidelines on national accounting,

5.2.5. Maritime Spatial Planning and Integrated Coastal Zone Management

In 2008 the EU published a roadmap for maritime spatial planning and in 2009 the Intergovernmental Oceanographic Commission (IOC) of UNESCO published a step-by-step approach for marine spatial planning. Both consider the necessary step for monitoring and evaluation.

The EU Roadmap stated the need for a transparent and regular monitoring and evaluation mechanism as part of MSP. Nevertheless this monitoring is stated mainly in relation with the environment conditions. This Roadmap also mentioned the need to develop a MSP based on sound information and scientific knowledge, and an integrated database for maritime socioeconomic statistics that was under development at that time. The Roadmap also stated that MSP “should be used to manage ongoing activities and guide future development in a sea area. A strategic plan for the overall management of a given sea area should include detailed objectives. These objectives should allow arbitration in the case of conflicting sectoral interests.” That is, objectives to be stated seems to be more related with possible arbitration of conflicts, and less with monitoring, which it seems to be more related with environmental issues.

The EU Directive on MSP adopted in 2014 stated in the preamble that “maritime spatial planning should cover the full cycle of problem and opportunity identification, information collection, planning, decision-making, implementation, revision or updating, and the monitoring of implementation, and should have due regard to land-sea interactions and best available knowledge.” Article 14 on Monitoring and reporting establishes that the Commission shall submit to the European Parliament and to the Council every four years a report outlining the progress made in implementing this Directive.

The step-by-step approach proposed by the UNESCO identifies at least two types of monitoring relevant to MSP:

- Assessment of the state of the system (for example, what is the state of biodiversity in the marine management area?);
- Measuring the performance of the MSP management actions (for example, are the management actions we have taken to produce the outcomes we desire effective, efficient, and equitable?).

An effective performance monitoring system begins with a clear set of well-specified planning objectives, as recognized on the UNESCO Document. McLeod K. and Leslie H. (2009), cited by Douvère F.(2010). It considers that “since MSP aims at achieving social, economic, and ecological objectives, a range of social, economic, and ecological indicators will need to be identified and used to measure performance of the spatial and temporal measures taken toward achieving them”.

Recognizing that ecological and socioeconomic outcomes take a long time to accomplish Douvère F. (2010) refers that a set of governance indicators can demonstrate short term progress of MSP process. The SAS would provide some insights into long term socioeconomic outcomes of a MSP process, although some tailored calculations will need to be done, considering only the activities that take place on the marine zones. Also important for spatial measures, like MSP, are future attempts to have sub-national desegregations of the socioeconomic results.

Portuguese legislation states the permanent assessment of the instruments of the national maritime spatial planning, namely having in mind the objectives and indicators established for the follow-up and assessment of the National Ocean Strategy. It also states that the assessment of the socioeconomic effects of the instruments of the national maritime spatial planning is measured in light of the strategic objectives established in the NOS. This close connection between the strategic objectives defined in the NOS and the assessment of the MSP results, makes the SAS products and figures so relevant for the MSP assessment in Portugal.

Integrated, multidisciplinary and cross sector management ensuring consistency between the spatial planning of the national maritime space and the spatial planning of the land territory. In particular, coastal zone is one of the principles imposed by Portuguese law to MSP. For now the results obtained with SAS cannot support the analysis of this principle.

5.2.6. Ocean Economy Assessment by OECD

The OECD published, for the first time, in June 2016, an estimate of the overall global value of the ocean economy on the basis of the ocean industries selected, and also an estimate of the employment level, and the respective breakdowns by sector and broad geographic regions. The ocean industries selected were:

- Industrial capture fisheries;
- Maritime and coastal tourism;
- Industrial fish processing;
- Maritime equipment;
- Industrial marine aquaculture;
- Shipbuilding and repair;
- Offshore oil and gas;
- Port activities;
- Shipping;
- Offshore wind.

This selection excluded economic activity in the artisanal and/or self-employment which are significant in some parts of the world (e.g. capture fisheries, aquaculture and shipping). Some were not considered due difficulties in access to data at international level (e.g. marine biotechnology, ocean renewable energy, seabed mining) and others due to the fact that some new activities have not yet developed to a commercial scale at a world level (e.g. marine biotechnology, ocean renewable energy, seabed mining).

As a concluding remark the OECD report point to the need of an increased effort to improve data quality, data coverage and measurement techniques in order to arrive at a more accurate

assessment of the ocean-based industries and also of their potential for the future. In particular, the report underlines that it would be helpful if more countries were to use the UN International Standard Industrial Classification of All Economic Activities Revision 4 (ISIC Rev. 4) as the statistical classification system for the ocean economy, as well as separate ocean-based from land based activities.

Likewise, the adoption of a methodology close to the one proposed by the SAS would be helpful to have better ocean economy estimates in a global context. ISIC Rev. 4 adoption would be the first essential step for this path.

6. Results

The results of SAS are publicly available, at Statistics Portugal website:

Press release:

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=261968449&DESTAQUESmodo=2&xlang=en

Tables:

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_cnacionais2010&contexto=cs&selTab=tab3&perfil=220677460&INST=220617355

[Table E.7.1.1 – Satellite account for the sea kind of activity units, by group \(No; annual\)](#)

[Table E.7.1.2 - Output \(P.1\), by group \(current prices; annual\)](#)

[Table E.7.1.3 - Intermediate consumption \(P.2\), by group \(current prices; annual\)](#)

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7. Conclusions

The SAS 2010-2013 was a pilot project and the first account worldwide, apart from an experimental exercise by the Philippines, in 2010. Since the beginning of this pilot project, in 2013, more countries are using the national accounts to evaluate the ocean economy, but none produces a Satellite Account for the sea or ocean. The Portuguese SAS illustrates the economic weight of around 60 thousand entities that developed activities totally or partially related to the sea in the national economy.

Box 13 - SAS main results

In the period 2010-2013 the **ocean/sea economy represented on average, 3.1% of national GVA and 3.6% of national employment** (full-time equivalent - FTE).

SAS includes characteristic activities, such as Fisheries and aquaculture, processing and wholesale and retail of its products, Non-living marine resources, Ports, transports and logistics, Nautical sports and tourism, Shipbuilding, maintenance and repair, Infrastructure and maritime works and New uses and resources of the ocean like marine renewable, marine biotechnology and earth observation (1.7% of the GVA and 2.0% of the employment), crosscutting activities, that includes Maritime equipment and Maritime services (0.6% of the GVA and 0.7% of the employment) and the activities favoured by the proximity of the sea, that corresponds to coastal tourism (0.8% of the GVA and 0.9% of the employment).

The average compensation of employees in the SAS exceeded about 3% of the national average remuneration.

In the period 2010-2013 the national economy recorded a significant cumulative reduction with GVA declining by 5.4% and employment by 10.0%. The economic activities considered within SAS presented more favourable performances as the GVA generated by the “sea” increased 2.1%, while the employment decreased 3.4%

The main advantages of this account are the feasibility and reliability, as the SAS universe is a sub-universe of the NA. It also allows comparability, both internally, with the NA, and externally, if other countries chose to adopt a similar methodology, namely following ESA 2010 as a common framework.

With the presentation of SAS results, the NSS and its users now have sectorial information, robust and consistent with the NA, on the main variables that characterize the sea/ocean economy at a national level.

The implementation of the SAS was complex and time consuming, given the requirement of methodological rigor in face of a pioneer account, as well as the fragility and, sometimes, the lack of detailed and updated data sources for the sector.

The SAS required a comprehensive desk research of the state of the art of the international methodologies, used worldwide, to account the ocean economy and the interaction and

discussions with many entities and partners of the ocean related activities to define the sea universe.

The SAS results do not correspond to the sum of information available for each unit/KAU selected for the final SAS universe. The results have a macroeconomic nature and were estimated in accordance with the best methodological practices, adjusted to the national reality, to the available data sources, and to the ESA 2010 rules, that are consistent with the PNA (benchmark-year 2011).

Since SAS is a satellite account of the PNA, its results are representative at a national level and comparable with PNA.

According to OECD, any complete ocean economy definition should contemplate, besides the set of economic activities that take place at sea and others that are not performing at sea, but depend on it, also the marine natural capital and the non-marketable services of the marine ecosystems. However, these activities are not integrated in the SAS, since they are not included in the NA' production boundary according to the ESA 2010. The SAS results include only the direct effects of the activities connected with the sea and are conditional on the adopted methodological choices, given the pilot nature of the project and the available information in some areas.

The main driver of the SAS design was to support the assessment of the blue growth performance on the context of the National Ocean Strategy and to provide further input on the Integrated Maritime Policy at a European Level. Nevertheless, the methodological roots of the present SAS can be considered a step ahead on integrated instruments to support decision making and an open window to further multilevel policies and for balancing environmental and socioeconomic policies. For these reasons, SAS should be considered an instrument par excellence for an integrated maritime policy.

SAS has a great potential and the classifications and methodologies used may enable further additional estimates. SAS sub-products could encompass tailor made products to monitor several maritime policies. SAS design classified, originally, each entity (KAU) by NACE Rev. 2, by product, by level of observation and by group. Other dimensions could be added, namely the corresponding function and sub-national level, allowing additional estimates and crossing tables with several dimensions. They may include additional estimations at a sectorial level, by function, at a geographical level, and a mix of the several dimensions.

Since SAS considers a value chain perspective and many characteristic activities of the ocean economy depend on others, or on support infrastructures, located in coastal zone, an analytical tridimensional analysis approach of SAS (activities and its location/NACE Rev. 2 codes, sub-national analysis and a Geographical Information System (GIS) analysis of establishments or marine space utilization) would be a future research area.

Apart from the SAS potential, further improvements of the project may include:

- **Sea R&D and high education** - R&D by fields of science (FOS) and by industry; improved estimations through the identification of sea or sea related subjects in broader and more general courses and the respective number of teaching hours; improved student's proxy with additional information of the number of teachers and the respective hours of teaching sea subjects;
- **Sea economy indirect effects** - The deep understanding of the sea economy in the context of the statistical system, obtained with the SAS development, might be seen as a seed for future estimates of indirect effects based on input-output analysis considering national accounts tables;
- **Ecosystem services accounting** - the SAS stated a complete definition for sea economy, opening avenues for future research, including the ones for ecosystem services accounting and for a broader use of economic analysis in supporting marine and maritime policies definition, monitoring, evaluation and feedback.

8. Framework legislation

National

- Decree-Law No. 381/2007 of November 14 - Establishes the Portuguese Classification of Economic Activities, Revision 3;
- Decree-Law No. 136/2012 of July 2 - Organic Law of Statistics Portugal: Establishes the rules which governs the Statistics Portugal;
- Decree-Law No. 38/2015 of March 12 - Develops LBOGEM and implementing Directive 2014/89/EU establishing the legal framework for MSP;
- Implementing Decree No. 17/2012 of January 31 - Creation of the Directorate- General for Maritime Policy
- Law No. 5/1998 of January 31 and amended by Decree-Law 142/2013 of October 18 - Organic Law of Banco de Portugal;
- Law No. 67/1998 of October 26 – Personal Data Protection Law: transposes into Portuguese law the Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and the free movement;
- Law No. 22/2008 of May 13 - Establishes the General Bases for the National Statistical System;
- Law No. 17/2014 of April 10 - Law that establishes the basis for the Maritime Spatial Planning and Management (LBOGEM);
- Ordinance No. 423/2012 of December 28 - approves the statutes of Statistics Portugal, which define their internal organization;
- Regional Implementing Decree 7/2013/A of July 11 - Establishes the structure of the Azores Regional Statistics Service and approves the respective framework of management staff;
- Regional Legislative Decree 16/2004/M of July 16 - Approves the organic of the Regional Directorate of Statistics of Madeira.

International

- Decision (COM) No 504/2012 of the Commission, of September 17. Relative to EUROSTAT;
- Directive 2008/56/EC of the European Parliament and the Council, of June 17, establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive);

- Directive 2014/89/EU of the European Parliament and of the Council, of July 23, establishing a framework for maritime spatial planning;
- Recommendation 2002/413/EC of the European Parliament and of the Council, of May 30, concerning the implementation of Integrated Coastal Zone Management in Europe;
- Regulation (EC) No 831/2002 of May 17. Implementing Council Regulation (EC) No 322/97 on Community statistics, concerning access to confidential data for scientific purposes;
- Regulation (EC) No 177/2008 of the European Parliament and of the Council, of February 20. It establishes a common and harmonized framework for business registers for statistical purposes. Repealing Regulation (EEC) No 2186/93 which established a common framework for setting up business registers for statistical purposes with harmonized definitions, characteristics, scope and updating procedures;
- Regulation (EC) No 222/2009 of the European Parliament and of the Council of March 11. (Burden of proof). Amending Regulation (EC) No 638/2004 which established the basic provisions for Community statistics relating to trade in goods between Member States;
- Regulation (EC) No 223/2009 of the European Parliament and of the Council of March 11. Establishes a legal framework for the development, production and dissemination of European statistics;
- Regulation (EC) No 471/2009 of the European Parliament and of the Council, of May 6. It establishes a common framework for the systematic production of Community statistics relating to the trading of goods with third countries (referred to as 'external trade statistics');
- Regulation (EU) No 520/2010 of the Commission, of June 16. Amending Regulation (EC) No 831/2002 concerning access to confidential data for scientific purposes for surveys and statistical data sources available;
- Regulation (EU) No 1097/2010 of the Commission, of November 26. It establishes a common framework for business registers for statistical purposes, as regards the exchange of confidential data between the Commission (EUROSTAT) and central banks;
- Regulation (EU) No 99/2013 of the European Parliament and of the Council, of January 15. European Statistical Programme 2013-2017;
- Regulation (EU) No 549/2013 of the European Parliament and of the Council, of May 21. European System of National and Regional Accounts in the European Union;
- Regulation (EU) No 557/2013 of the Commission, of June 17. Access to confidential data for scientific purposes and repealing Regulation (EC) No 831/2002.

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Acronyms and abbreviations

- A3ES – Agency for Assessment and Accreditation of Higher Education
- AEP – *Associação Empresarial de Portugal* (Portuguese business association)
- AFEM – Association Business Forum of the Sea Economy
- Al Navais – *Associação das Indústrias Navais* (Portuguese shipbuilding association)
- AMAL - Algarve Inter-municipal Community
- ANQEP, I.P. - National Agency for Qualification and Vocational Education, IP
- APA – Portuguese Environment Agency
- APL - Administration of the Port of Lisbon
- APP – *Associação de Portos de Portugal* (Portuguese port authorities association)
- APSS – *Associação dos Portos de Setúbal e Sesimbra* (Setúbal and Sesimbra port authority)
- Banco de Portugal* (Portuguese central bank)
- BBA – Bluebio Alliance
- CAE Rev. 3 – Portuguese Classification of Economic Activities, Revision 3
- CCS - Carbon Capture and Storage
- CGA - *Caixa Geral de Aposentações* (General retirement fund)
- CGE - General Government Budget
- CIM – Inter-municipal Communities
- CIMAC - Alentejo Central Inter-municipal Community
- CN - Combined Nomenclature
- CNAEF - *Classificação Nacional das Áreas de Educação e Formação* (National classification of education and training areas)
- COFOG - Classification of the Functions of Government
- COICOP – Classification of Individual Consumption by Purpose
- COICOP/HICP - Portuguese Classification of Individual Consumption by Purpose
- COPNI – Classification of the Purposes of Non-Profit Institutions Serving Households
- COTEC Portugal - National Business Association for Innovation
- CPA 2008 - Classification of Products by Activity, 2008 version
- CRUP - The Council of Rectors of Portuguese Universities
- CSA - Culture Satellite Account
- CSE - Statistical Council Portugal
- DGAM - *Direção-Geral da Autoridade Marítima* (Portuguese maritime authority)
- DGEEC - Directorate-General for Education and Science Statistics
- DGEG - Directorate-General for Energy and Geology
- DGMARE - Directorate-General for Maritime Affairs and Fisheries from the European Commission
- DGMP – Directorate-General for Maritime Policy
- DGMR - Directorate-General for Natural Resources, Safety and Maritime Services
- DGPA - Directorate-General for Fisheries and Aquaculture
- DGRDN - *Direção-Geral de Recursos da Defesa Nacional* (Directorate-General for resources and national defence)

DOCAPESCA – *Portos e Lotas, S.A* (Ports and fish markets)

DRAM - Regional Directorate for Sea Affairs of the Government of the Azores

DRAP Alentejo – *Direção-Regional de Agricultura e Pescas do Alentejo* (Regional directorate for agriculture and fisheries of Alentejo)

DRAP Algarve – *Direção-Regional de Agricultura e Pescas do Algarve* (Regional directorate for agriculture and fisheries of Algarve)

DRAP Centro – *Direção-Regional de Agricultura e Pescas do Centro* (Regional directorate for agriculture and fisheries of Centro)

DRAP Lisboa e Vale do Tejo – *Direção-Regional de Agricultura e Pescas de Lisboa e Vale do Tejo* (Regional directorate for agriculture and fisheries of Lisboa e Vale do Tejo)

DRAP Norte – *Direção-Regional de Agricultura e Pescas do Norte* (Regional directorate for agriculture and fisheries of Norte)

DREM - Regional Statistical Office of Madeira

DROTA - *Direção-Regional do Ordenamento do Território e Ambiente da Madeira* (Regional Directorate for the spatial planning and the environment of Madeira)

EBE - Operating surplus and gross mixed income

EC – European Commission

EEA – European Environmental Agency

EICT - Electronics, Information and Communication Technologies

ENIDH - Nautical College Infante D. Henrique

ENMC - *Entidade Nacional para o Mercado de Combustíveis* (National authority for the oil market)

ESA 2010 - European System of Accounts 2010

ESF - European Social Fund

ESS - European Statistical System

EU - European Union

EUMSAA - EU Maritime Strategy for the Atlantic Area

EUROSTAT - Statistical Office of the European Union

FCT – *Fundação para a Ciência e a Tecnologia* (Portuguese science and technology authority)

FISIM - Financial intermediation services indirectly measured

FOR-MAR – Professional Training Centre for Fisheries and Sea

Fórum Oceano - *Associação da Economia do Mar* (Association of Maritime Economy)

FOS - Fields of Science

FTE - Full Time Employment

GCF - Gross Capital Formation

GDP – Gross Domestic Product

GFCF - Gross Fixed Capital Formation

GIS - Geographic Information System

GNR - National Republican Guard

GPP - Office of Planning and Policy

GVA - Gross Value Added

HBS/IDEF- Household Budget Survey

HELCOM - The Helsinki Convention on the Protection of the Marine Environment in the Baltic Sea Area

IAEC – *Inquérito Anual às Empresas de Construção* (Annual survey to the construction business)

IAPI – Annual Survey on Industrial Production

IASM - *Inquérito às associações de socorros mútuos* (Survey to the mutual societies)

IBAS/SCIE - Integrated Business Account System

ICMA – Inter-Ministerial Commission for Maritime Affairs

ICNF – *Instituto da Conservação da Natureza e das Florestas* (Institute for the conservation of nature and forests)

IEFP - Employment and Vocational Training Institute

IEVA – High Value Added Infrastructures

IFAP – *Instituto de Financiamento da Agricultura e Pescas* (Institute of finance for agriculture and fisheries)

Ifremer - French Research Institute for Exploitation of the Sea

IGO - Gulbenkian Oceans Initiative

IGTI - *Inquérito aos Gastos Turísticos Internacionais* (Survey to international tourism expenditures)

IMP – Integrated Maritime Policy

IMPIC, I.P. - *Instituto dos Mercados Públicos, do Imobiliário e da Construção, I.P.* (Institute of public markets, real estate and construction)

IMT – Institute for Mobility and Transport

INEM - National Medical Emergency Institute, IP

INPI - Portuguese Institute of Industrial Property

IOC - Intergovernmental Oceanographic Commission (UNESCO)

IPCTN – Survey on National Scientific and Technological Potential

IPDJ – Portuguese Institute of Sport and Youth

IPTR - *Inquérito à Procura Turística dos Residentes* (Survey on the touristic demand of residents)

ISCO - International Standard Classification of Occupations

ISCTE-IUL - Lisbon University Institute

ISIC Rev. 4 - International Standard Industrial Classification of All Economic Activities Revision 4 (UN)

ISP - Portuguese Insurance Institute

ITS - International Trade Statistics

JUP - Port Single Window

KAU – Kind-of-Activity Unit

LAU – Local Administrative Units

LFS - Labour Force Survey

LIAM – *Linha de Investigação em Assuntos do Mar – Maria Scientia* (Maritime affairs research)

LISCONT – *Operadores de Contentores, S.A.* (Container operator)

LISNAVE – *Estaleiros Navais, S.A.* (Shipyard)

LNEC - National Civil Engineering Laboratory

LNEG – National Laboratory of Energy and Geology

LBOGEM – Basic Law for the Maritime Spatial Planning and Management

MA – Millennium Ecosystem Assessment

MAMAOT – Ministry of Agriculture, Sea, Environment and Spatial Planning
MAS - Ministry of Agriculture and Sea
MS - Member States
MSFD - Marine Strategy Framework Directive
MSP - Maritime Spatial Planning
NA - National Accounts
NACE Rev. 1.1 – Statistical Classification of Economic Activities in the European Community, Revision 1.1
NACE Rev. 2 – Statistical Classification of Economic Activities in the European Community, Revision 2
NAS - Normalization Accounting System
NGOE – Non-Governmental Organizations for the Environment
NOS 2013-2020 – National Ocean Strategy 2013-2020
NPCN - National Accounts Product Classification
NPI - Non-Profit Institutions
NPISH - Non-Profit Institutions Serving Households
NRCN - National Accounts Industry Classification
NSFR - National Strategic Reference Framework (2007-2013)
NSS - National Statistical System
NUTS - Nomenclature of Territorial Units for Statistics
NUTS 3 - Nomenclature of Territorial Units for Statistics, Level 3
Oceano XXI - Association for the Knowledge and Economy of the Sea (Portuguese ocean cluster)
OCIP - Budgets and Accounts of Private Institutions of Social Solidarity
OECD – Organisation for Economic Cooperation and Development
OOM - Oceanic Observatory of Madeira
OOP - Public Works Observatory
OSPAR - Convention for the Protection of the Northeast Atlantic Marine Environment
P.1 - Output
P.2 - Intermediate consumption
PM – Market production
PNA - Portuguese National Accounts
PNM – Non-market production
POC - Official Plan of Accounting Standards
PSAI - Portuguese Sea and Atmosphere Institute
PTPC – European Construction Technology Platform
R&D – Research and Development
RAA - Autonomous Region of the Azores
RAM - Autonomous Region of Madeira
RNAAT – *Registo Nacional dos Agentes de Animação Turística* (National registry of business companies of touristic animation)
ROV - Remote Operated Vehicle

S.11 – Non-financial corporations
S.11001 - Public non-financial corporations
S.11002 - National private non-financial corporations
S.12 – Financial corporations
S.13 – General government
S.14 – Households
S.15 – Non-profit institutions serving households (NPISH)
SAER – *Sociedade de Avaliação de Empresas e Risco*
SAS - Satellite Account for the Sea
SBI/IES - Simplified Business Information/*Informação Empresarial Simplificada*)
SCNP - Portuguese System of National Accounts
SEF – Immigration and Borders Service
SESA - Social Economy Satellite Account and Volunteer Work
SICAE - Information system of the data records regarding the Portuguese Economic Activities Classification
SNA - United Nations System of National Accounts
SREA - Regional Statistical Office of Azores
SSA - Sports Satellite Account
SUT - Supply and Use Tables
TGECS - Task-Group for the Extension of the Continental Shelf
TSA - Tourism Satellite Account
Turismo de Portugal, I.P. (Tourism central public authority)
UA - University of Aveiro
UAb – *Universidade Aberta*
UAlg - University of Algarve
UBI – University of Beira Interior
UCP - Portuguese Catholic University
UÉvora – University of Évora
ULisboa – University of Lisboa
UMinho – University of Minho
UN – United Nations
UNESCO - United Nations Educational, Scientific and Cultural Organization
UNEP – MAP - The Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)
UNGA - United Nations General Assembly
UNL - New University of Lisbon
UP - University of Oporto
UTAD - University of Trás-os-Montes and Alto Douro
VAT – Value added type taxes
WG ESA - Working Group on Economic and Social Assessment

ANNEXES

Annex I – List of contacted entities, meetings and visits to build SAS

Table 6 - Meetings and visits under the SAS building process

Date	Entities involved	Meetings and visits	People involved (number)	Time (hours)
30.07.2013	Statistics Portugal DGMP AFEM + Oceano XXI	1 st Technical meeting with private business (Portuguese ocean cluster)	Statistics Portugal - 1 DGMP – 1 AFEM + Oceano XXI - 2	1
09.2013	DGMP DOCAPESCA	1 st Technical meeting with DOCAPESCA (Fisheries and aquaculture)	DGMP – 1 DOCAPESCA – 1	2
30.09.2013	DGMP DGAM	1 st Technical meeting with DGAM/MDN (Maritime authority/Ministry of Defence)	DGMP – 2 DGAM – 1	3,5
1.10.2013	DGMP DGAM	2 nd Technical meeting with DGAM/MDN (Maritime authority/Ministry of Defence)	DGMP – 2 DGAM – 2	4
2.10.2013	DGMP PSAI	1 st Technical meeting with PSAI (Fisheries and aquaculture research and meteorology)	DGMP – 2 PSAI – 1	3
1.11.2013	Statistics Portugal DGMP <i>Turismo de Portugal</i>	1 st Technical meeting with <i>Turismo de Portugal</i> (Coastal and nautical tourism)	Statistics Portugal – 3 DGMP – 3 <i>Turismo de Portugal</i> – 3	3
12.11.2013	Statistics Portugal DGMP <i>Turismo de Portugal</i>	2 nd Technical meeting with <i>Turismo de Portugal</i> (Coastal and nautical tourism/inter-relations with other satellite accounts: sports, culture, environment)	Statistics Portugal – 6 DGMP – 2 <i>Turismo de Portugal</i> – 3	2
20.11.2013	Statistics Portugal DGMP AFEM +Oceano XXI	2 nd Technical meeting with private business (Portuguese ocean cluster)	Statistics Portugal - 2 DGMP – 3 AFEM + Oceano XXI - 2	2,5
16.12.2013	Statistics Portugal DGMP <i>Turismo de Portugal</i>	3 rd Technical meeting with <i>Turismo de Portugal</i> (Coastal and nautical tourism)	Statistics Portugal – 3 DGMP – 3 <i>Turismo de Portugal</i> – 3	3
04.02.2014	Statistics Portugal DGMP <i>Turismo de Portugal</i>	4 th Technical meeting with <i>Turismo de Portugal</i> (Coastal and nautical tourism)	Statistics Portugal – 4 DGMP – 3 <i>Turismo de Portugal</i> – 3	2
11.04.2014	Statistics Portugal DGMP AFEM + Oceano XXI	3 rd Technical meeting with private business (Portuguese ocean cluster)	Statistics Portugal - 2 DGMP – 3 AFEM + Oceano XXI - 2	2
23.05.2014	Statistics Portugal DGMP GPP	1 st Technical meeting with GPP (Agriculture in saline soils)	Statistics Portugal - 4 DGMP – 3 GPP - 1	2

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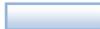
Date	Entities involved	Meetings and visits	People involved (number)	Time (hours)
09.07.2014	Statistics Portugal DGMP DOCAPESCA	Meeting with the port community and visit to the Peniche Port and Fishing market (<i>Lota</i>)	Statistics Portugal - 2 DGMP – 2 DOCAPESCA – 2 Port of Peniche -1 Port community - 8	3
31.07.2014	Statistics Portugal DGMP AFEM LISNAVE AI Navais	Visit to the LISNAVE Shipyard	Statistics Portugal - 1 DGMP – 1 LISNAVE - 1 AFEM - 1 AI Navais - 1	2
09.09.2014	Statistics Portugal DGMP AEP	1 st Technical meeting with AEP (Portuguese business association – nautical tourism)	Statistics Portugal - 1 DGMP – 2 AEP - 1	1,5
09.09.2014	Statistics Portugal DGMP UCP	1 st Technical meeting with LIAM- <i>Maria Scientia</i> /UCP (Marine and maritime higher education)	Statistics Portugal - 1 DGMP – 2 UCP - 1	1
11.09.2014	DGMP IGO	1 st Technical meeting with IGO/Calouste Gulbenkian Foundation (Marine environment and ecosystems)	DGMP – 2 IGO/Gulbenkian - 1	0,5
12.09.2014	Statistics Portugal DGMP APL LISCONT	1 st Technical meeting and visit to the Lisbon port authority (APL- <i>Doca de Alcântara</i>)	Statistics Portugal - 2 DGMP – 2 APL – 5 LISCONT - 2	2
22.10.2014	Statistics Portugal DGMP RAA	1 st Kick-off skype meeting with RAAçores (Ocean activities in the autonomous region of Azores)	Statistics Portugal – 2 DGMP – 2 SREA – 2 DRAM – 1	1
31.10.2014	Statistics Portugal DGMP RAM	1 st Kick-off skype meeting with RAMadeira (Ocean activities in the autonomous region of Madeira)	Statistics Portugal – 1 DGMP – 2 DREM – 2 DROTA -1	1,5
13.11.2014	Statistics Portugal DGMP APL	2 nd Technical meeting with APL (JUP platform – single port window)	Statistics Portugal - 2 DGMP – 2 APL - 4	2,5
17.11.2014	Statistics Portugal DGMP AFEM APP	1 st Technical meeting with APP/APSS (Ports)	Statistics Portugal - 2 DGMP – 2 AFEM -1 APP/APSS - 1	1
24.11.2014	Statistics Portugal DGMP RAM	2 nd skype Technical meeting with RAMadeira (Ocean activities in the autonomous region of Madeira)	Statistics Portugal – 2 DGMP – 3 DREM – 2 DROTA -1 OOM -1	1

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Date	Entities involved	Meetings and visits	People involved (number)	Time (hours)
25.11.2014	DGMP MarAlgarve	1 st Technical meeting with MarAlgarve (Ocean's activities in Algarve)	DGMP – 4 MarAlgarve - 1	1,5
5.12.2014	Statistics Portugal DGMP AFEM + Oceano XXI	4 th Technical meeting with private business (Portuguese ocean cluster)	Statistics Portugal - 2 DGMP – 2 AFEM + Oceano XXI - 4	1,5
19.12.2014	Statistics Portugal IPDJ	1 st meeting with IPDJ (Nautical sports/inter-relations with other satellite accounts: sports)	Statistics Portugal – 1 IPDJ - 1	1
13.01.2015	Statistics Portugal DGMP IPDJ	2 nd meeting with IPDJ (Nautical sports/inter-relations with other satellite accounts: sports)	Statistics Portugal – 2 DGMP - 2 IPDJ - 1	1,5
22.01.2015	DGMP AEP Oceano XXI	2 nd Technical meeting with AEP (Portuguese business association – nautical tourism/Portugal Náutico Project articulation with SAS)	DGMP – 4 AEP -2 Oceano XXI – 2	2
2.02.2015	DGMP INPI	1 st Technical meeting with INPI (Ocean innovation and R&D)	DGMP -2 INPI - 1	2
15.12.2015	DGMP FCT	1 st Technical meeting with FCT (R&D)	DGMP – 1 FCT - 2	1,5
21.12.2015	DGMP FCT	2 nd Technical meeting with FCT (R&D)	DGMP – 1 FCT - 2	1,5
19.01.2016	DGMP PSAI	2 nd Technical meeting with PSAI (Fisheries and aquaculture research and meteorology)	DGMP – 1 PSAI – 1	1
2.05.2016	Statistics Portugal WavEC	1 st Technical meeting with WavEC (Offshore renewables)	Statistics Portugal – 2 WavEC - 1	1,5
15.06.2016	Statistics Portugal DGMP Fórum Oceano	5 th Technical meeting with private business (Portuguese oceans cluster)	Statistics Portugal - 4 DGMP – 1 Fórum Oceano - 3	2
TOTAL	34 technical meetings & visits, of which: 9 meetings with private entities 22 meetings with public entities 3 visits		Person-hours: Statistics Portugal – 108 DGMP – 134.5	Total hours: 64 h

Legend:

	Technical meetings with public institutions
	Technical meetings with private institutions
	Visits

List of meetings and visits' entities:

- AEP – *Associação Empresarial de Portugal* (Portuguese business association)
- AFEM – Association Business Forum of the Sea Economy
- AI Navais – *Associação das Indústrias Navais* (Portuguese shipbuilding association)
- APL – Administration of the Port of Lisbon
- APP – *Associação de Portos de Portugal* (Portuguese port authorities association)
- APSS – *Administração dos Portos de Setúbal e Sesimbra* (Setúbal and Sesimbra port authority)
- DGMP – Directorate-General for Maritime Policy
- DOCAPESCA – *Portos e Lotas, S.A* (Ports and fish markets)
- DRAM - Regional Directorate for Sea Affairs of the Government of the Azores
- DREM - Regional Statistical Office of Madeira
- DROTA - *Direção-Regional do Ordenamento do Território e Ambiente da Madeira* (Regional Directorate for the spatial planning and the environment of Madeira)
- DGAM - *Direção-Geral da Autoridade Marítima* (Portuguese maritime authority)
- FCT – *Fundação para a Ciência e a Tecnologia* (Portuguese science and technology authority)
- Fórum Oceano - *Associação da Economia do Mar* (Association of Maritime Economy created in 2015, from the merger of AFEM and Oceano XXI)
- GPP - Office of Planning and Policy
- IGO - Gulbenkian Oceans Initiative
- INPI - Portuguese Institute of Industrial Property
- IPDJ –Portuguese Institute of Sport and Youth
- LIAM – *Linha de Investigação em Assuntos do Mar – Maria Scientia* (Maritime affairs research)
- LISCONT – *Operadores de Contentores, S.A.* (Container operator)
- LISNAVE – *Estaleiros Navais, S.A.* (Shipyard)
- MarAlgarve - *Divisão de Desenvolvimento Económico e Promoção Turística Município de Faro* (Division of economic development and touristic promotion of the Municipality of Faro)
- Oceano XXI - Association for the Knowledge and Economy of the Sea (Portuguese ocean cluster)
- OOM - Oceanic Observatory of Madeira
- PSAI - Portuguese Sea and Atmosphere Institute
- RAA - Autonomous Region of the Azores
- RAM – Autonomous Region of Madeira
- SREA - Regional Statistical Office of Azores
- Turismo de Portugal, I.P.* (Tourism central public authority)
- UCP – Portuguese Catholic University
- WavEC – Offshore Renewables

Other contacts and collaboration under the SAS universe definition and coefficient's estimation:

ANQEP, I.P. - National Agency for Qualification and Vocational Education, IP

AMAL - Algarve Inter-municipal Community

APA – Portuguese Environment Agency

BBA – Bluebio Alliance

CIMAC – Alentejo Central Inter-municipal Community

CIM Aveiro - Aveiro Inter-municipal Community

CIM Médio Tejo - Médio Tejo Inter-municipal Community

CIM Oeste - Oeste Inter-municipal Community

CIM Região de Coimbra - Coimbra Inter-municipal Community

COTEC Portugal - National Business Association for Innovation

DGEEC - Directorate-General for Education and Science Statistics

DGEG - Directorate-General for Energy and Geology

DGMR - Directorate-General for Natural Resources, Safety and Maritime Services

DGRDN - *Direção-Geral de Recursos da Defesa Nacional* (Directorate-General for resources and national defence)

DRAP Alentejo – *Direção-Regional de Agricultura e Pescas do Alentejo* (Regional directorate for agriculture and fisheries of Alentejo)

DRAP Algarve - *Direção-Regional de Agricultura e Pescas do Algarve* (Regional directorate for agriculture and fisheries of Algarve)

DRAP Centro - *Direção-Regional de Agricultura e Pescas do Centro* (Regional directorate for agriculture and fisheries of Centro)

DRAP Lisboa e Vale do Tejo - *Direção-Regional de Agricultura e Pescas de Lisboa e Vale do Tejo* (Regional directorate for agriculture and fisheries of Lisboa e Vale do Tejo)

DRAP Norte - *Direção-Regional de Agricultura e Pescas do Norte* (Regional directorate for agriculture and fisheries of Norte)

ENMC - *Entidade Nacional para o Mercado de Combustíveis* (National authority for the oil market)

ENIDH - Nautical College Infante D. Henrique

FOR-MAR – Professional Training Centre for Fisheries and Sea

GNR - National Republican Guard

ICNF – *Instituto da Conservação da Natureza e das Florestas* (Institute for the conservation of nature and forests)

IFAP – *Instituto de Financiamento da Agricultura e Pescas* (Institute of finance for agriculture and fisheries)

IMT – Institute for Mobility and Transport

INEM - National Medical Emergency Institute, IP

ISP - Portuguese Insurance Institute

Lisbon Oceanarium

LNEC - National Civil Engineering Laboratory
LNEG – National Laboratory of Energy and Geology
Municipality of Cascais
Municipality of Sintra
Oceano XXI - Association for the Knowledge and Economy of the Sea (Portuguese ocean cluster)
SEF – Immigration and Borders Service
SREA - Regional Statistical Office of Azores
TGECS - Task-Group for the Extension of the Continental Shelf
Turismo de Portugal, I.P. (Tourism central public authority)

Contacted entities regarding the sea/ocean training, high level education and R&D:

Sea professional training:

ANQEP, I.P. - National Agency for Qualification and Vocational Education, IP
FOR-MAR – Professional Training Centre for Fisheries and Sea
IPDJ –Portuguese Institute of Sport and Youth

Sea high level education and R&D:

CRUP - The Council of Rectors of Portuguese Universities
DGEEC - Directorate-General for Education and Science Statistics
ENIDH – Nautical College Infante D. Henrique
FCT – *Fundação para a Ciência e a Tecnologia* (Portuguese science and technology authority)
ISCTE-IUL - Lisbon University Institute
UA – University of Aveiro
UAb – *Universidade Aberta*
UAlg - University of Algarve
UBI – University of Beira Interior
UCP – Portuguese Catholic University
UÉvora – University of Évora
ULisboa – University of Lisbon
UMinho – University of Minho
UNL - New University of Lisbon
UP – University of Oporto
UTAD – University of Trás-os-Montes and Alto Douro

Table 7 - Institutions and technical contacts

Institution	Technical contact
APA - Portuguese Environment Agency	Angelina Castro Luís Morbey
AEP – <i>Associação Empresarial de Portugal</i> (Portuguese business association)	Maria da Saúde Inácio Sérgio Ribeiro (consultant Portugal Náutico)
AFEM – Association Business Forum for the Economy of the Sea	Fernando Ribeiro e Castro Francisco Beirão Miguel Marques (PwC) Oflia Faria (SaeR)
AI Navais – <i>Associação das Indústrias Navais</i> (Portuguese shipbuilding association)	José Ventura de Sousa
AMAL – Algarve Inter-municipal Community	António Eusébio
ANQEP – National Agency for Qualification and Vocational Education, IP	Francisco Sousa Marques
APL – Administration of the Port of Lisbon	Ana Gomes Clara Xavier Letras Soares Manuel Loureiro Ricardo Figueira
APP – Portuguese Port Authorities Association	Vítor Caldeirinha
APSS – <i>Administração dos Portos de Setúbal e Sesimbra</i> (Setúbal and Sesimbra port authority)	Vítor Caldeirinha
BBA – Bluebio Alliance	Helena Vieira Tiago Pitta e Cunha
CIMAC - Alentejo Central Inter-municipal Community	Patrícia Roberto
CIM Aveiro - Aveiro Inter-municipal Community	José Anjos
CIM Médio Tejo - Médio Tejo Inter-municipal Community	Ana Paula Remédios
CIM Oeste CIM Oeste - Oeste Inter-municipal Community	António Correia
CIM Região de Coimbra - Coimbra Inter-municipal Community	Gisela Parreiral
COTEC Portugal - National Business Association for Innovation	Tiago Pitta e Cunha
DGAM - <i>Direção-Geral da Autoridade Marítima</i> (Portuguese maritime authority)	Dionísio Varela
DGEEC - Directorate-General for Education and Science Statistics	Ana Martins
DGEG – Directorate-General for Energy and Geology	Carlos Oliveira Gabriela Moniz Henrique Santos Isabel Madeira José Miguel Martins Marlene Neves Rui Rodrigues

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Institution	Technical contact
DGMR – Directorate-General for Natural Resources, Safety and Maritime Services	Leonor Elias Paula Alcobia
DGRDN - <i>Direção-Geral de Recursos da Defesa Nacional</i> (Directorate-General for resources and national defence)	Carlos Pereira Mendes
DOCAPESCA – <i>Portos e Lotas, S.A</i> (Ports and fish markets)	Ana Paula Queiroga Filomena Saraiva
DRAM - Regional Directorate for Sea Affairs of the Government of the Azores	Gilberto Carreira
DRAP Alentejo - <i>Direção-Regional de Agricultura e Pescas do Alentejo</i> (Regional directorate for agriculture and fisheries of Alentejo)	Francisco Murteira
DRAP Algarve - <i>Direção-Regional de Agricultura e Pescas do Algarve</i> (Regional directorate for agriculture and fisheries of Algarve)	Bernardo Fialho Carla Gomes Fernando Severino José Graça Júlio Cabrita Miguel Estevão
DRAP Centro - <i>Direção-Regional de Agricultura e Pescas do Centro</i> (Regional directorate for agriculture and fisheries of Centro)	Adelina Maria Machado Martins David Lucas Nunes José Salgueiro
DRAP Lisboa e Vale do Tejo - <i>Direção-Regional de Agricultura e Pescas de Lisboa e Vale do Tejo</i> (Regional directorate for agriculture and fisheries of Lisboa e Vale do Tejo)	Dália Ribeiro Elizete Jardim José Lacerda Fonseca Manuel Meireles Paulo Monteiro Pedro Caetano
DRAP Norte - <i>Direção-Regional de Agricultura e Pescas do Norte</i> (Regional directorate for agriculture and fisheries of Norte)	Adília Domingues Maria José Silva Quintão
DREM - Regional Statistical Office of Madeira	Emília Alves Paulo Vieira
DROTA - <i>Direção-Regional do Ordenamento do Território e Ambiente da Madeira</i> (Regional directorate for the spatial planning and the environment of Madeira)	Manuel Ara Oliveira
ENIDH – Nautical College Infante D. Henrique	Abel Silva Simões
FAP - <i>Força Aérea Portuguesa</i> (Portuguese air force)	Duarte Gomes
FCT - <i>Fundação para a Ciência e a Tecnologia</i> (Portuguese science and technology authority)	Graça Carvalho Pedro Leite
Fórum Oceano (merger of AFEM – Association Business Forum for the Economy of the Sea and Oceano XXI - Association for the Knowledge and Economy of the Sea)	Francisco Beirão Frederico Ferreira Miguel Marques (PwC) Otilia Faria (SaeR)

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Institution	Technical contact
GNR – National Republican Guard	José António Palma Pedro Anselmo Correia
GPP - Office of Planning and Policy	Cláudia Costa Maria da Luz Mendes Rui Pereira Rui Trindade
ICNF – <i>Instituto da Conservação da Natureza e das Florestas</i> (Institute for the conservation of nature and forests)	Anabela Trindade Mário Silva Paula Sarmento Sofia Silveira
IFAP – <i>Instituto de Financiamento da Agricultura e Pescas</i> (Institute of finance for agriculture and fisheries)	Fausto Gomes João Martins Luís Souto Barreiros Maria Fernanda Rosário Gama Tiago Pessoa
IGO – Gulbenkian Oceans Initiative	Filipa Saldanha Francisca Moura
IMT - Institute for Mobility and Transport	Jorge Semedo
INEM - National Medical Emergency Institute, IP	Paula Real
INPI – Portuguese Institute of Industrial Property	Inês Silva
IPDJ –Portuguese Institute of Sport and Youth	Fernando Tenreiro
ISP – Portuguese Insurance Institute	Cristina Silva
LIAM – <i>Linha de Investigação em Assuntos do Mar – Maria Scientia</i> (Maritime affairs research) from Portuguese Catholic University	Maria Fernandes Teixeira
Lisbon Oceanarium	João Falcato
LISCONT – <i>Operadores de Contentores, S.A.</i> (Container operator)	Alexandre Gonçalves
LISNAVE – <i>Estaleiros Navais, S.A.</i> (Shipyard)	Humberto Bandeira
LNEG – National Laboratory of Energy and Geology	Margarida Mata
<i>Lota de Peniche</i> (Peniche fish market)	Helena Santos
MarAlgarve - <i>Divisão de Desenvolvimento Económico e Promoção Turística Município de Faro</i> (Division of economic development and touristic promotion of the Municipality of Faro)	João Correia Vargues
<i>Marinha</i> (Portuguese Navy)	Nelson Neves Viegas
Municipality of Cascais	Miguel Pinto Luz Maria João Faria
Municipality of Sintra	Ana Queiroz do Vale Sofia Vaz Tainha

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Institution	Technical contact
Oceano XXI – Association for the Knowledge and Economy of the Sea (Portuguese ocean cluster)	Elizabete Mota Frederico Ferreira Rui Azevedo
OOM - Oceanic Observatory of Madeira	Carlos Andrade Rui Caldeira
<i>Porto de Peniche</i> (Peniche port)	Ricardo Esteves
PSAI – Portuguese Sea and Atmosphere Institute	António Carochó Maria Emília Carriço
SEF – Immigration and Borders Service	Maria de Fátima Almeida
SREA - Regional Statistical Office of Azores	Augusto Elavai Vasco Martins Silva
TGECS – Task-Group for the Extension of the Continental Shelf	Aldino Santos de Campos Frederico Dias
<i>Turismo de Portugal, I.P.</i> (Tourism central public authority)	António Mello Cristina Salsinha Rosário Torres Costa
UBI – University of Beira Interior	Jorge Silva
UP – University of Oporto	João Tasso
WavEC – Offshore Renewables	Janete Gonçalves Nuno Matos

Annex II – The SAS universe

In the base year 2011, in a total of 58,738 entities, the private sector (non-financial corporations plus households) accounted for 99,3%, of which 71,6% assigned to Coastal tourism, included in the Recreation, sports, culture and tourism group. It was followed by institutional sectors S.15 Non-profit institutions serving households (0.4%), S.13 General government (0.2%), S.11001 Public non-financial corporations (0.08%) and S.12 Financial corporations (0.05%).

Table 8 - SAS Kind-of-activity units by observation level

Observation level	SAS Universe (KAU number)
Characteristic activities (<i>Fisheries, aquaculture, processing, wholesale and retail of its products, Non-living marine resources, Ports, transports and logistics, Recreation, sports, culture and tourism (except tourism in coastal areas), Shipbuilding, maintenance and repair, Infrastructures and maritime works and New uses and resources of the ocean</i>)	13.952
Crosscutting activities (<i>Maritime equipment and services</i>)	2.730
Activities favored by the proximity of the sea (<i>Coastal tourism</i>)	42.056
TOTAL	58.738

Table 9 - SAS Kind-of-activity units by group

Group	SAS Universe (KAU number)
1. Fisheries, aquaculture, processing, wholesale and retail of its products	10.296
2. Non-living marine resources	83
3. Ports, transports and logistics	1.092
4. Recreation, sports, culture and tourism	43.370
5. Shipbuilding, maintenance and repair	373
6. Maritime equipment	495
7. Infrastructures and maritime works	772
8. Maritime services	2.235
9. New uses and resources of the ocean	22
TOTAL	58.738

Table 10 - SAS Kind-of-units by institutional sector

Institucional sector		SAS Universe (KAU number)
Code	Name	2011
S.11 and S.14	Non –financial corporations and Households	58.314
S.11001	Public non-financial corporations	47
S.12	Financial corporations	27
S.13	General government	131
S.15	Non-profit institutions serving households	219
TOTAL		58.738

Annex III – Industries (NACE Rev. 2/CAE Rev. 3) correspondence with SAS by inclusion level, group and observation level

Table 11 - SAS industries (sequential NACE Rev. 2/CAE Rev. 3 class codes)

NACE class codes and description			SAS	SAS Group									SAS Observation level		
NACE class code	Description	NACE section	Inclusion level	1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity
01.49	Raising of other animals	A	r	x									x		
03.11	Marine fishing	A	T	x									x		
03.12	Freshwater fishing	A	T	x									x		
03.21	Marine aquaculture	A	T	x									x		
03.22	Freshwater aquaculture	A	T	x									x		
08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	B	P							x			x		
08.12	Operation of gravel and sand pits; mining of clays and kaolin	B	P		x					x			x		
08.93	Extraction of salt (NACE 08931)	B	P		x								x		
09.90	Support activities for other mining and quarrying	B	P							x			x		
10.13	Production of meat and poultry meat products	C	P	x									x		
10.20	Processing and preserving of fish, crustaceans and molluscs	C	T	x									x		
10.41	Manufacture of oils and fats	C	P	x		x							x		
10.84	Manufacture of condiments and seasonings	C	P		x								x		
10.85	Manufacture of prepared meals and dishes	C	P	x	x								x		
10.86	Manufacture of homogenised food preparations and dietetic food	C	P	x									x		
10.89	Manufacture of other food products n.e.c.	C	P	x	x								x		
10.91	Manufacture of prepared feeds for farm animals	C	P	x									x		
10.92	Manufacture of prepared pet foods	C	P	x									x		
13.91	Manufacture of knitted and crocheted fabrics	C	P						x					x	
13.92	Manufacture of made-up textile articles, except apparel	C	P						x					x	
13.94	Manufacture of cordage, rope, twine and netting	C	P						x					x	
13.99	Manufacture of other textiles n.e.c.	C	P						x					x	
14.13	Manufacture of other outerwear (NACE 14131)	C	P						x					x	
14.19	Manufacture of other wearing apparel and accessories	C	P						x					x	
15.12	Manufacture of luggage, handbags and the like, saddlery and harness	C	P						x					x	
15.20	Manufacture of footwear (NACE 15201)	C	P						x					x	
16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	C	P						x					x	
17.29	Manufacture of other articles of paper and paperboard	C	P						x					x	
18.12	Other printing	C	P						x					x	
18.13	Pre-press and pre-media services	C	P						x					x	
19.20	Manufacture of refined petroleum products (NACE 19201)	C	P		x								x		
20.16	Manufacture of plastics in primary forms	C	P						x					x	
20.30	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	C	P						x					x	
20.41	Manufacture of soap and detergents, cleaning and polishing preparations	C	P						x					x	
20.59	Manufacture of other chemical products n.e.c.	C	P			x			x			x		x	
22.11	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	C	P						x					x	
22.19	Manufacture of other rubber products	C	P						x					x	
22.21	Manufacture of plastic plates, sheets, tubes and profiles	C	P						x					x	
22.22	Manufacture of plastic packinggoods	C	P						x					x	
22.29	Manufacture of other plastic products	C	P						x					x	
23.12	Shaping and processing of flat glass	C	P						x					x	
23.13	Manufacture of hollow glass	C	P						x					x	
23.14	Manufacture of glass fibres	C	P						x					x	
23.41	Manufacture of ceramic household and ornamental articles	C	P						x					x	
23.61	Manufacture of concrete products for construction purposes	C	P							x			x		
23.63	Manufacture of ready-mixed concrete	C	P							x			x		
23.64	Manufacture of mortars	C	P							x			x		
23.99	Manufacture of other non-metallic mineral products n.e.c.	C	P							x			x		
24.10	Manufacture of basic iron and steel and of ferro-alloys	C	P						x					x	
24.51	Casting of iron	C	P						x					x	
24.52	Casting of steel	C	P						x					x	
24.54	Casting of other non-ferrous metals	C	P						x					x	
25.11	Manufacture of metal structures and parts of structures	C	P						x					x	
25.12	Manufacture of doors and windows of metal	C	P						x					x	
25.29	Manufacture of other tanks, reservoirs and containers of metal	C	P						x					x	
25.30	Manufacture of steam generators, except central heating hot water boilers	C	P						x					x	
25.40	Manufacture of weapons and ammunition	C	P						x					x	
25.61	Treatment and coating of metals	C	P						x					x	
25.62	Machining	C	P						x					x	
25.73	Manufacture of tools	C	P						x					x	
25.93	Manufacture of wire products, chain and springs	C	P						x					x	
25.99	Manufacture of other fabricated metal products n.e.c.	C	P						x					x	

(continues)

(continuation)

NACE class code	NACE class codes and description	NACE section	SAS Inclusion level	SAS Group									SAS Observation level				
				1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity		
26.11	Manufacture of electronic components	C	P							X						X	
26.20	Manufacture of computers and peripheral equipment	C	P							X						X	
26.30	Manufacture of communication equipment	C	P							X						X	
26.51	Manufacture of instruments and appliances for measuring, testing and navigation	C	P							X						X	
26.70	Manufacture of optical instruments and photographic equipment	C	P							X						X	
27.11	Manufacture of electric motors, generators and transformers	C	P							X						X	
27.12	Manufacture of electricity distribution and control apparatus	C	P							X						X	
27.20	Manufacture of batteries and accumulators	C	P							X						X	
27.32	Manufacture of other electronic and electric wires and cables	C	P							X						X	
27.33	Manufacture of wiring devices	C	P							X						X	
27.51	Manufacture of electric domestic appliances	C	P							X						X	
27.90	Manufacture of other electrical equipment	C	P							X						X	
28.11	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	C	P							X						X	
28.12	Manufacture of fluid power equipment	C	P							X						X	
28.13	Manufacture of other pumps and compressors	C	P							X						X	
28.15	Manufacture of bearings, gears, gearing and driving elements	C	P							X						X	
28.22	Manufacture of lifting and handling equipment	C	P							X						X	
28.24	Manufacture of power-driven hand tools	C	P							X						X	
28.29	Manufacture of other general-purpose machinery n.e.c.	C	P							X						X	
28.92	Manufacture of machinery for mining, quarrying and construction	C	P							X						X	
28.93	Manufacture of machinery for food, beverage and tobacco processing	C	P							X						X	
28.99	Manufacture of other special-purpose machinery n.e.c.	C	P							X						X	
29.20	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	C	P							X						X	
29.31	Manufacture of electric and electronic equipment for motor vehicles	C	P							X						X	
29.32	Manufacture of electrical and electronic equipment for motor vehicles	C	P							X						X	
30.11	Building of ships and floating structures	C	T							X					X		
30.12	Building of pleasure and sporting boats	C	T							X					X		
30.20	Manufacture of railway locomotives and rolling stock	C	P							X						X	
30.30	Manufacture of air and spacecraft and related machinery	C	P							X						X	
31.09	Manufacture of other furniture	C	P							X						X	
32.30	Manufacture of sports goods	C	P							X						X	
32.50	Manufacture of medical and dental instruments and supplies	C	P							X						X	
32.99	Other manufacturing n.e.c.	C	P							X						X	
33.11	Repair of fabricated metal products	C	P							X						X	
33.12	Repair of machinery	C	P							X	X				X	X	
33.13	Repair of electronic and optical equipment	C	P							X						X	
33.14	Repair of electrical equipment	C	P							X						X	
33.15	Repair and maintenance of ships and boats	C	T							X					X		
33.19	Repair of other equipment	C	P							X						X	
33.20	Installation of industrial machinery and equipment	C	P							X						X	
35.11	Production of electricity	D	r												X		
35.13	Electricity distribution	D	r												X		
35.30	Ice production (NACE 35302)	D	p	X												X	
36.00	Water collection, treatment and supply	E	P		X										X		
38.11	Collection of non-hazardous waste	E	P												X		
38.21	Treatment and disposal of non-hazardous waste	E	P								X	X				X	
38.31	Dismantling of wrecks	E	P							X					X		
38.32	Recovery of sorted materials	E	P			X	X					X				X	
41.10	Development of building projects	F	P				X										X
41.20	Construction of residential and non-residential buildings	F	P				X	X			X						X
42.11	Construction of roads and motorways	F	P								X				X		
42.12	Construction of railways and underground railways	F	P								X				X		
42.13	Construction of bridges and tunnels	F	P								X				X		
42.21	Construction of utility projects for fluids	F	P								X				X		
42.22	Construction of utility projects for electricity and telecommunications	F	P								X				X		
42.91	Construction of water projects	F	P								X				X		
42.99	Construction of other civil engineering projects n.e.c.	F	P								X				X		
43.11	Demolition	F	P								X				X		
43.13	Test drilling and boring	F	P								X				X		
43.21	Electrical installation	F	P								X	X				X	
43.22	Plumbing, heat and air conditioning installation	F	P								X	X				X	
43.29	Other construction installation	F	P								X					X	
43.32	Joinery installation	F	P								X					X	
43.34	Painting and glazing	F	P								X				X		
43.99	Other specialised construction activities n.e.c.	F	P								X				X		
45.11	Sale of cars and light motor vehicles	G	P				X					X			X		X
45.19	Sale of other motor vehicles	G	P				X					X			X		X
45.20	Maintenance and repair of motor vehicles	G	P									X			X		
45.31	Wholesale trade of motor vehicle parts and accessories	G	P									X			X		
45.32	Retail trade of motor vehicle parts and accessories	G	P									X			X		
45.40	Sale, maintenance and repair of motorcycles and related parts and accessories	G	P									X			X		

(continues)

(continuation)

NACE class code	NACE class codes and description	NACE section	SAS	SAS Group									SAS Observation level			
				Inclusion level	1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity
46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	G	P				x					x		x	x	
46.17	Agents involved in the sale of food, beverages and tobacco	G	P	x										x		
46.18	Agents specialised in the sale of other particular products	G	P						x		x				x	
46.19	Agents involved in the sale of a variety of goods	G	P				x		x		x			x	x	x
46.21	Wholesale of grain, unmanufactured tobacco, seeds and animal feeds	G	r	x										x		
46.23	Wholesale of live animals	G	P	x										x		
46.34	Wholesale of beverages (NACE 46342)	G	P				x							x		
46.38	Wholesale of other food, including fish, crustaceans and molluscs	G	P	x	x						x			x	x	
46.39	Non-specialised wholesale of food, beverages and tobacco (NACE 46390)	G	r	x										x		
46.43	Wholesale of electrical household appliances	G	P									x			x	
46.44	Wholesale of china and glassware and cleaning materials (NACE 46442)	G	P									x			x	
46.45	Wholesale of perfume and cosmetics	G	P									x			x	
46.49	Wholesale of other household goods	G	P	x				x			x			x	x	x
46.51	Wholesale of computers, computer peripheral equipment and software	G	P									x			x	
46.52	Wholesale of electronic and telecommunications equipment and parts	G	P							x		x			x	
46.62	Wholesale of machine tools	G	P							x		x			x	
46.63	Wholesale of mining, construction and civil engineering machinery	G	P									x			x	
46.69	Wholesale of other machinery and equipment	G	P	x			x	x		x		x		x	x	
46.71	Wholesale of solid, liquid and gaseous fuels and related products (NACE 46711)	G	P				x							x		
46.72	Wholesale of metals and metal ores	G	P							x		x			x	
46.73	Wholesale of wood, construction materials and sanitary equipment	G	P		x		x		x	x	x			x	x	
46.75	Wholesale of chemical products	G	P									x			x	
46.76	Wholesale of other intermediate products	G	P							x		x			x	
46.77	Wholesale of waste and scrap	G	P								x	x		x	x	
46.90	Non-specialised wholesale trade	G	P	x	x	x		x	x	x	x	x		x	x	
47.11	Retail sale in non-specialised stores with food, beverages or tobacco predominating	G	P	x		x						x		x	x	
47.19	Other retail sale in non-specialised stores (NACE 47191)	G	r	x										x		
47.23	Retail sale of fish, crustaceans and molluscs in specialised stores	G	T	x			x							x		
47.29	Other retail sale of food in specialised stores	G	P	x							x			x	x	
47.30	Retail sale of automotive fuel in specialised stores	G	P	x			x				x	x		x	x	
47.41	Retail sale of computers, peripheral units and software in specialised stores	G	P									x			x	
47.42	Retail sale of telecommunications equipment in specialised stores	G	P				x							x		x
47.43	Retail sale of audio and video equipment in specialised stores	G	P									x			x	
47.51	Retail sale of textiles in specialised stores	G	P									x			x	
47.52	Retail sale of hardware, paints and glass in specialised stores	G	P					x		x				x		
47.54	Retail sale of electrical household appliances in specialised stores	G	P									x			x	
47.61	Retail sale of books in specialised stores	G	P									x			x	
47.64	Retail sale of sporting equipment in specialised stores	G	P	x			x				x			x	x	x
47.65	Retail sale of games and toys in specialised stores	G	P	x										x		
47.71	Retail sale of clothing in specialised stores	G	P				x							x		x
47.72	Retail sale of footwear and leather goods in specialised stores	G	P				x							x		x
47.73	Dispensing chemist in specialised stores	G	P									x			x	
47.78	Other retail sale of new goods in specialised stores	G	P	x			x	x			x			x	x	x
47.79	Retail sale of second-hand goods in stores	G	P									x			x	
47.81	Retail sale via stalls and markets of food, beverages and tobacco products	G	P	x										x		
47.91	Retail sale via mail order houses or via Internet	G	P	x			x					x		x	x	x
47.99	Other retail sale not in stores, stalls or markets	G	P	x			x							x		x
49.20	Freight rail transport	H	P				x							x		
49.32	Taxi operation	H	P					x								x
49.39	Other passenger land transport n.e.c.	H	P				x	x						x		x
49.41	Freight transport by road	H	P				x							x		
49.42	Removal services	H	P				x							x		
50.10	Sea and coastal passenger water transport	H	T				x	x						x		
50.20	Sea and coastal freight water transport	H	T				x	x						x		
50.30	Inland passenger water transport	H	T				x	x						x		
50.40	Inland freight water transport	H	T				x							x		
52.10	Warehousing and storage	H	P	x			x							x		
52.21	Service activities incidental to land transportation	H	P				x							x		
52.22	Service activities incidental to water transportation	H	T				x	x						x		
52.24	Cargo handling	H	P				x							x		
52.29	Other transportation support activities	H	P				x	x						x		
55.11	Hotel establishments with restaurant	I	P					x								x
55.12	Hotel establishments without restaurant	I	P					x								x
55.20	Holiday and other short-stay accommodation	I	P					x								x
55.30	Camping grounds, recreational vehicle parks and trailer parks	I	P					x								x
55.90	Other accommodation	I	P					x								x
56.10	Restaurants and mobile food service activities	I	P	x				x						x		x
56.21	Event catering activities	I	P					x								x
56.29	Other food service activities	I	P					x								x
56.30	Beverage serving activities	I	P					x								x

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(continuation)

NACE class code	NACE class codes and description	NACE section	SAS Inclusion level	SAS Group									SAS Observation level		
				1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity
58.11	Book publishing	J	P										X		X
58.13	Publishing of newspapers	J	P										X		X
58.14	Publishing of journals and periodicals	J	P										X		X
61.10	Radio broadcasting	J	P										X		X
61.20	Television programming and broadcasting activities	J	P										X		X
61.90	Other telecommunications activities	J	P										X		X
62.01	Computer programming activities	J	P										X		X
62.02	Computer consultancy activities	J	P										X		X
62.03	Computer facilities management activities	J	P										X		X
62.09	Other information technology and computer service activities	J	P										X		X
63.11	Data processing, hosting and related activities	J	P										X		X
63.12	Web portals	J	P										X		X
63.99	Other information service activities n.e.c.	J	P										X		X
64.19	Other monetary intermediation	K	P										X		X
64.20	Activities of holding companies	K	P										X		X
64.92	Other credit granting	K	P										X		X
65.11	Life insurance	K	P										X		X
65.12	Non-life insurance	K	P										X		X
66.21	Risk and damage evaluation	K	P										X		X
66.22	Activities of insurance agents and brokers	K	P										X		X
66.29	Other activities auxiliary to insurance and pension funding	K	P										X		X
66.30	Fund management activities	K	P										X		X
68.10	Buying and selling of own real estate	L	P				X								X
68.20	Renting and operating of own or leased real estate	L	P				X								X
68.32	Management of real estate on a fee or contract basis	L	P				X								X
69.10	Legal activities	M	P										X		X
69.20	Accounting, bookkeeping and auditing activities; tax consultancy	M	P										X		X
70.21	Public relations and communication activities	M	P										X		X
70.22	Business and other management consultancy activities	M	P	X			X			X	X	X	X	X	X
71.11	Architectural activities	M	P										X		X
71.12	Engineering activities and related technical consultancy	M	P		X		X	X	X	X	X	X	X	X	X
71.20	Technical testing and analysis	M	P					X		X			X		X
72.11	Research and experimental development on biotechnology	M	P								X	X			X
72.19	Other research and experimental development on natural sciences and engineering	M	P				X				X	X			X
72.20	Research and experimental development on social sciences and humanities	M	P								X				X
73.11	Advertising agencies	M	P								X				X
73.20	Market research and public opinion polling	M	P								X				X
74.10	Specialised design activities	M	P								X				X
74.20	Photographic activities	M	P								X				X
74.90	Other professional, scientific and technical activities n.e.c.	M	P							X	X	X			X
75.00	Veterinary activities	M	P								X				X
77.11	Renting and leasing of cars and light motor vehicles	N	P				X								X
77.12	Renting and leasing of trucks	N	P								X				X
77.21	Renting and leasing of recreational and sports goods	N	P				X								X
77.29	Renting and leasing of other personal and household goods	N	P				X								X
77.32	Renting and leasing of construction and civil engineering machinery and equipment	N	P							X					X
77.33	Renting and leasing of office machinery and equipment (including computers)	N	P								X				X
77.34	Renting and leasing of water transport equipment	N	T				X	X					X		X
77.39	Renting and leasing of other machinery, equipment and tangible goods n.e.c.	N	P				X				X			X	X
78.10	Activities of employment placement agencies	N	P				X				X				X
79.11	Travel agency activities	N	P				X	X			X				X
79.12	Tour operator activities	N	P				X								X
79.90	Other reservation service and related activities	N	P				X								X
80.10	Private security activities	N	P								X				X
80.20	Security systems service activities	N	P								X				X
81.21	General cleaning of buildings	N	P								X				X
81.22	Other building and industrial cleaning activities	N	P								X				X
81.29	Other cleaning activities	N	P								X				X
82.30	Organisation of conventions and trade shows	N	P				X				X				X
82.99	Other business support service activities n.e.c.	N	P	X			X	X			X	X			X
84.11	General public administration activities	O	P								X				X
84.12	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	O	P								X				X
84.13	Regulation of and contribution to more efficient operation of businesses	O	P								X				X
84.22	Defence activities	O	P								X				X
84.24	Public order and safety activities	O	P								X				X
84.25	Fire service activities	O	P								X				X
84.30	Compulsory social security activities	O	P								X				X
85.20	Primary education	P	P								X				X
85.31	General secondary education	P	P								X				X
85.32	Technical and vocational secondary education	P	P								X				X
85.41	Post-secondary non-tertiary education	P	P								X				X
85.42	Tertiary education	P	P								X				X
85.51	Sports and recreation education	P	P				X				X		X		X
85.53	Driving school activities	P	P				X				X		X		X
85.59	Other education n.e.c.	P	P				X				X		X		X

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(continuation)

NACE class code	NACE class codes and description	NACE section	SAS Inclusion level	SAS Group									SAS Observation level					
				1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity			
86.21	General medical practice activities	Q	P															
86.22	Specialist medical practice activities	Q	P															
90.01	Performing arts	R	P															
90.02	Support activities to performing arts	R	P															
91.02	Museums activities	R	P															
91.04	Botanical and zoological gardens and nature reserves activities	R	P															
93.11	Operation of sports facilities	R	P															
93.12	Activities of sport clubs	R	P															
93.19	Other sports activities	R	P															
93.21	Activities of amusement parks and theme parks	R	P															
93.29	Other amusement and recreation activities	R	P															
94.11	Activities of business and employers membership organisations	S	P	X		X		X										
94.99	Activities of other membership organisations n.e.c.	S	P	X		X	X											
95.11	Repair of computers and peripheral equipment	S	P															
95.12	Repair of communication equipment	S	P															
96.01	Washing and (dry-)cleaning of textile and fur products	S	P															
96.04	Physical well-being activities	S	P															
96.09	Other personal service activities n.e.c.	S	P	X			X											

Notes:

(1) It includes Marine mineral resources and Conventional offshore marine energy resources (Oil and Natural gas)

(2) It includes sea, coastal and inland transportation

(3) It includes maritime, coastal and inland tourism; NACE 55 and 56 are applied only to coastal areas.

Note:

Codes based on the NACE rev1.1 nomenclature, used in the study made for Eurostat in 2009, by Ifremer et al., Study on the field of maritime policy. Approach towards an Integrated Maritime

Totally included in SAS

Table 12- SAS industries by group (NACE Rev. 2/CAE Rev. 3 class codes)

1. Fisheries, aquaculture, processing, wholesale and retail of its products						
Observ. Level	Group	Inclusion Level	NACE class code	Description	NACE section	
Char.	1	r	01.49	Raising of other animals	A	
Char.	1	T	03.11	Marine fishing	A	
Char.	1	T	03.12	Freshwater fishing	A	
Char.	1	T	03.21	Marine aquaculture	A	
Char.	1	T	03.22	Freshwater aquaculture	A	
Char.	1	P	10.13	Production of meat and poultry meat products	C	
Char.	1	T	10.20	Processing and preserving of fish, crustaceans and molluscs	C	
Char.	1	P	10.41	Manufacture of oils and fats	C	
Char.	1	P	10.85	Manufacture of prepared meals and dishes	C	
Char.	1	P	10.86	Manufacture of homogenised food preparations and dietetic food	C	
Char.	1	P	10.89	Manufacture of other food products n.e.c.	C	
Char.	1	P	10.91	Manufacture of prepared feeds for farm animals	C	
Char.	1	P	10.92	Manufacture of prepared pet foods	C	
Char.	1	P	35.30	Ice production (NACE 35302)	D	
Char.	1	P	46.17	Agents involved in the sale of food, beverages and tobacco	G	
Char.	1	r	46.21	Wholesale of grain, unmanufactured tobacco, seeds and animal feeds	G	
Char.	1	P	46.23	Wholesale of live animals	G	
Char.	1	P	46.38	Wholesale of other food, including fish, crustaceans and molluscs (NACE 46381; NACE 46382)	G	
Char.	1	r	46.39	Non-specialised wholesale of food, beverages and tobacco (NACE 46390)	G	
Char.	1	r	46.49	Wholesale of other household goods (NACE 46493; NACE 46494)	G	
Char.	1	r	46.69	Wholesale of other machinery and equipment (NACE 46690)	G	
Char.	1	P	46.90	Non-specialised wholesale trade	G	
Char.	1	P	47.11	Retail sale in non-specialised stores with food, beverages or tobacco predominating	G	
Char.	1	r	47.19	Other retail sale in non-specialised stores (NACE 47191)	G	
Char.	1	T	47.23	Retail sale of fish, crustaceans and molluscs in specialised stores	G	
Char.	1	P	47.29	Other retail sale of food in specialised stores (NACE 47292)	G	
Char.	1	P	47.30	Retail sale of automotive fuel in specialised stores	G	
Char.	1	P	47.64	Retail sale of sporting equipment in specialised stores	G	
Char.	1	P	47.65	Retail sale of games and toys in specialised stores	G	
Char.	1	P	47.78	Other retail sale of new goods in specialised stores	G	
Char.	1	P	47.81	Retail sale via stalls and markets of food, beverages and tobacco products	G	
Char.	1	P	47.91	Retail sale via mail order houses or via Internet	G	
Char.	1	P	47.99	Other retail sale not in stores, stalls or markets	G	
Char.	1	P	52.10	Warehousing and storage (NACE 52101)	H	
Char.	1	r	56.10	Restaurants and mobile food service activities (NACE 56101; NACE 56107)	I	
Char.	1	P	70.22	Business and other management consultancy activities	M	
Char.	1	P	82.99	Other business support service activities n.e.c.	N	
Char.	1	P	94.11	Activities of business and employers membership organisations	S	
Char.	1	P	94.99	Activities of other membership organisations n.e.c. (NACE 94995)	S	
Char.	1	P	96.09	Other personal service activities n.e.c.	S	

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2. Non-living marine resources (1)					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	2	P	08.12	Operation of gravel and sand pits; mining of clays and kaolin	B
Char.	2	P	08.93	Extraction of salt (NACE 08931)	B
Char.	2	P	10.84	Manufacture of condiments and seasonings	C
Char.	2	P	10.85	Manufacture of prepared meals and dishes	C
Char.	2	P	10.89	Manufacture of other food products n.e.c.	C
Char.	2	P	19.20	Manufacture of refined petroleum products (NACE 19201)	C
Char.	2	P	36.00	Water collection, treatment and supply	E
Char.	2	P	46.38	Wholesale of other food, including fish, crustaceans and molluscs (NACE 46382)	G
Char.	2	P	46.73	Wholesale of wood, construction materials and sanitary equipment (NACE 46732)	G
Char.	2	P	46.90	Non-specialised wholesale trade	G
Char.	2	P	71.12	Engineering activities and related technical consultancy	M

(1) It includes Marine mineral resources and Conventional offshore marine energy resources (Oil and Natural gas)

3. Ports, transports and logistics (2)					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	3	r	10.41	Manufacture of oils and fats (NACE 10413)	C
Char.	3	r	20.59	Manufacture of other chemical products n.e.c. (NACE 20591)	C
Char.	3	P	38.32	Recovery of sorted materials (NACE 38322)	E
Char.	3	P	46.34	Wholesale of beverages (NACE 46342)	G
Char.	3	P	46.69	Wholesale of other machinery and equipment (NACE 46690)	G
Char.	3	P	46.71	Wholesale of solid, liquid and gaseous fuels and related products (NACE 46711)	G
Char.	3	P	46.90	Non-specialised wholesale trade	G
Char.	3	P	47.11	Retail sale in non-specialised stores with food, beverages or tobacco predominating	G
Char.	3	P	49.20	Freight rail transport	H
Char.	3	P	49.39	Other passenger land transport n.e.c. (NACE 49392)	H
Char.	3	P	49.41	Freight transport by road	H
Char.	3	P	49.42	Removal services	H
Char.	3	P	50.10	Sea and coastal passenger water transport	H
Char.	3	P	50.20	Sea and coastal freight water transport	H
Char.	3	P	50.30	Inland passenger water transport	H
Char.	3	T	50.40	Inland freight water transport	H
Char.	3	P	52.10	Warehousing and storage	H
Char.	3	P	52.21	Service activities incidental to land transportation	H
Char.	3	P	52.22	Service activities incidental to water transportation	H
Char.	3	P	52.24	Cargo handling	H
Char.	3	P	52.29	Other transportation support activities	H
Char.	3	T	77.34	Renting and leasing of water transport equipment	N
Char.	3	P	78.10	Activities of employment placement agencies	N
Char.	3	P	79.11	Travel agency activities	N
Char.	3	P	94.11	Activities of business and employers membership organisations	S
Char.	3	P	94.99	Activities of other membership organisations n.e.c. (NACE 94995)	S

(2) It includes sea, coastal and inland transportation

4. Recreation, sports, culture and tourism (3)					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	4	P	41.10	Development of building projects	F
Char.	4	P	41.20	Construction of residential and non-residential buildings	F
Char.	4	r	45.11	Sale of cars and light motor vehicles	G
Char.	4	r	45.19	Sale of other motor vehicles	G
Char.	4	P	46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	G
Char.	4	P	46.19	Agents involved in the sale of a variety of goods	G
Char.	4	P	46.49	Wholesale of other household goods (NACE 43493; NACE 43494)	G
Char.	4	P	46.69	Wholesale of other machinery and equipment (NACE 46690)	G
Char.	4	P	46.73	Wholesale of wood, construction materials and sanitary equipment	G
Char.	4	P	47.23	Retail sale of fish, crustaceans and molluscs in specialised stores	G
Char.	4	P	47.30	Retail sale of automotive fuel in specialised stores	G
Char.	4	P	47.42	Retail sale of telecommunications equipment in specialised stores	G
Char.	4	P	47.64	Retail sale of sporting equipment in specialised stores	G
Char.	4	P	47.71	Retail sale of clothing in specialised stores	G
Char.	4	P	47.72	Retail sale of footwear and leather goods in specialised stores	G
Char.	4	P	47.78	Other retail sale of new goods in specialised stores	G
Char.	4	P	47.91	Retail sale via mail order houses or via Internet	G
Char.	4	P	47.99	Other retail sale not in stores, stalls or markets	G
Char.	4	P	49.32	Taxi operation	H
Char.	4	P	49.39	Other passenger land transport n.e.c.	H

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(continuation)

4. Recreation, sports, culture and tourism (3)					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	4	P	50.10	Sea and coastal passenger water transport	H
Char.	4	P	50.20	Sea and coastal freight water transport	H
Char.	4	P	50.30	Inland passenger water transport	H
Char.	4	P	52.22	Service activities incidental to water transportation	H
Char.	4	P	52.29	Other transportation support activities	H
Proxim.	4	P	55.11	Hotel establishments with restaurant	I
Proxim.	4	P	55.12	Hotel establishments without restaurant	I
Proxim.	4	P	55.20	Holiday and other short-stay accommodation	I
Proxim.	4	P	55.30	Camping grounds, recreational vehicle parks and trailer parks	I
Proxim.	4	P	55.90	Other accommodation	I
Proxim.	4	P	56.10	Restaurants and mobile food service activities	I
Proxim.	4	P	56.21	Event catering activities	I
Proxim.	4	P	56.29	Other food service activities	I
Proxim.	4	P	56.30	Beverage serving activities	I
Char.	4	P	68.10	Buying and selling of own real estate	L
Char.	4	P	68.20	Renting and operating of own or leased real estate	L
Char.	4	P	68.32	Management of real estate on a fee or contract basis	L
Char.	4	P	70.22	Business and other management consultancy activities	M
Char.	4	P	71.12	Engineering activities and related technical consultancy	M
Char.	4	P	77.11	Renting and leasing of cars and light motor vehicles	N
Char.	4	P	77.21	Renting and leasing of recreational and sports goods	N
Char.	4	P	77.29	Renting and leasing of other personal and household goods	N
Char.	4	P	77.34	Renting and leasing of water transport equipment	N
Char.	4	P	77.39	Renting and leasing of other machinery, equipment and tangible goods n.e.c.	N
Proxim.	4	P	79.11	Travel agency activities	N
Proxim.	4	P	79.12	Tour operator activities	N
Proxim.	4	P	79.90	Other reservation service and related activities	N
Char.	4	P	82.30	Organisation of conventions and trade shows	N
Char.	4	P	82.99	Other business support service activities n.e.c.	N
Char.	4	P	85.51	Sports and recreation education	P
Char.	4	P	85.53	Driving school activities	P
Char.	4	P	85.59	Other education n.e.c. (NACE 85591)	P
Char.	4	P	90.01	Performing arts	R
Char.	4	P	90.02	Support activities to performing arts	R
Char.	4	P	91.02	Museums activities	R
Char.	4	P	91.04	Botanical and zoological gardens and nature reserves activities	R
Char.	4	P	93.11	Operation of sports facilities	R
Char.	4	P	93.12	Activities of sport clubs	R
Char.	4	P	93.19	Other sports activities	R
Char.	4	P	93.21	Activities of amusement parks and theme parks	R
Char.	4	P	93.29	Other amusement and recreation activities	R
Char.	4	P	94.99	Activities of other membership organisations n.e.c. (NACE 94995)	S
Char.	4	P	96.04	Physical well-being activities	S
Char.	4	P	96.09	Other personal service activities n.e.c.	S

(3) It includes maritime, coastal and inland tourism; NACE 55 and 56 are applied only to coastal areas.

5. Shipbuilding, maintenance and repair

Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	5	T	30.11	Building of ships and floating structures	C
Char.	5	T	30.12	Building of pleasure and sporting boats	C
Char.	5	P	33.12	Repair of machinery	C
Char.	5	T	33.15	Repair and maintenance of ships and boats	C
Char.	5	P	38.31	Dismantling of wrecks	E
Char.	5	P	38.32	Recovery of sorted materials (NACE 38321)	E
Char.	5	P	41.20	Construction of residential and non-residential buildings	F
Char.	5	P	46.90	Non-specialised wholesale trade	G
Char.	5	P	47.52	Retail sale of hardware, paints and glass in specialised stores	G
Char.	5	P	47.78	Other retail sale of new goods in specialised stores	G
Char.	5	P	71.12	Engineering activities and related technical consultancy	M
Char.	5	P	72.19	Other research and experimental development on natural sciences and engineering	M
Char.	5	P	82.99	Other business support service activities n.e.c.	N
Char.	5	P	94.11	Activities of business and employers membership organisations	S

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(continuation)

6. Maritime equipment					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Cross.	6	P	13.91	Manufacture of knitted and crocheted fabrics	C
Cross.	6	P	13.92	Manufacture of made-up textile articles, except apparel	C
Cross.	6	P	13.94	Manufacture of cordage, rope, twine and netting	C
Cross.	6	P	13.99	Manufacture of other textiles n.e.c.	C
Cross.	6	P	14.13	Manufacture of other outerwear (NACE 14131)	C
Cross.	6	P	14.19	Manufacture of other wearing apparel and accessories	C
Cross.	6	P	15.12	Manufacture of luggage, handbags and the like, saddlery and harness	C
Cross.	6	P	15.20	Manufacture of footwear (NACE 15201)	C
Cross.	6	P	16.29	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials	C
Cross.	6	P	17.29	Manufacture of other articles of paper and paperboard	C
Cross.	6	P	18.12	Other printing	C
Cross.	6	P	18.13	Pre-press and pre-media services	C
Cross.	6	P	20.16	Manufacture of plastics in primary forms	C
Cross.	6	P	20.30	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	C
Cross.	6	P	20.41	Manufacture of soap and detergents, cleaning and polishing preparations	C
Cross.	6	P	20.59	Manufacture of other chemical products n.e.c.	C
Cross.	6	P	22.11	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	C
Cross.	6	P	22.19	Manufacture of other rubber products	C
Cross.	6	P	22.21	Manufacture of plastic plates, sheets, tubes and profiles	C
Cross.	6	P	22.22	Manufacture of plastic packaging goods	C
Cross.	6	P	22.29	Manufacture of other plastic products	C
Cross.	6	P	23.12	Shaping and processing of flat glass	C
Cross.	6	P	23.13	Manufacture of hollow glass	C
Cross.	6	P	23.14	Manufacture of glass fibres	C
Cross.	6	P	23.41	Manufacture of ceramic household and ornamental articles	C
Cross.	6	P	24.10	Manufacture of basic iron and steel and of ferro-alloys	C
Cross.	6	P	24.51	Casting of iron	C
Cross.	6	P	24.52	Casting of steel	C
Cross.	6	P	24.54	Casting of other non-ferrous metals	C
Cross.	6	P	25.11	Manufacture of metal structures and parts of structures	C
Cross.	6	P	25.12	Manufacture of doors and windows of metal	C
Cross.	6	P	25.29	Manufacture of other tanks, reservoirs and containers of metal	C
Cross.	6	P	25.30	Manufacture of steam generators, except central heating hot water boilers	C
Cross.	6	P	25.40	Manufacture of weapons and ammunition	C
Cross.	6	P	25.61	Treatment and coating of metals	C
Cross.	6	P	25.62	Machining	C
Cross.	6	P	25.73	Manufacture of tools	C
Cross.	6	P	25.93	Manufacture of wire products, chain and springs	C
Cross.	6	P	25.99	Manufacture of other fabricated metal products n.e.c.	C
Cross.	6	P	26.11	Manufacture of electronic components	C
Cross.	6	P	26.20	Manufacture of computers and peripheral equipment	C
Cross.	6	P	26.30	Manufacture of communication equipment	C
Cross.	6	P	26.51	Manufacture of instruments and appliances for measuring, testing and navigation	C
Cross.	6	P	26.70	Manufacture of optical instruments and photographic equipment	C
Cross.	6	P	27.11	Manufacture of electric motors, generators and transformers	C
Cross.	6	P	27.12	Manufacture of electricity distribution and control apparatus	C
Cross.	6	P	27.20	Manufacture of batteries and accumulators	C
Cross.	6	P	27.32	Manufacture of other electronic and electric wires and cables	C
Cross.	6	P	27.33	Manufacture of wiring devices	C
Cross.	6	P	27.51	Manufacture of electric domestic appliances	C
Cross.	6	P	27.90	Manufacture of other electrical equipment	C
Cross.	6	P	28.11	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	C
Cross.	6	P	28.12	Manufacture of fluid power equipment	C
Cross.	6	P	28.13	Manufacture of other pumps and compressors	C
Cross.	6	P	28.15	Manufacture of bearings, gears, gearing and driving elements	C
Cross.	6	P	28.22	Manufacture of lifting and handling equipment	C
Cross.	6	P	28.24	Manufacture of power-driven hand tools	C
Cross.	6	P	28.29	Manufacture of other general-purpose machinery n.e.c.	C
Cross.	6	P	28.92	Manufacture of machinery for mining, quarrying and construction	C
Cross.	6	P	28.93	Manufacture of machinery for food, beverage and tobacco processing	C
Cross.	6	P	28.99	Manufacture of other special-purpose machinery n.e.c.	C
Cross.	6	P	29.20	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	C
Cross.	6	P	29.31	Manufacture of electric and electronic equipment for motor vehicles	C
Cross.	6	P	29.32	Manufacture of electrical and electronic equipment for motor vehicles	C
Cross.	6	P	30.20	Manufacture of railway locomotives and rolling stock	C
Cross.	6	P	30.30	Manufacture of air and spacecraft and related machinery	C
Cross.	6	P	31.09	Manufacture of other furniture	C
Cross.	6	P	32.30	Manufacture of sports goods	C
Cross.	6	P	32.50	Manufacture of medical and dental instruments and supplies	C
Cross.	6	P	32.99	Other manufacturing n.e.c.	C

(continues)

(continuation)

6. Maritime equipment					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Cross.	6	P	33.11	Repair of fabricated metal products	C
Cross.	6	P	33.12	Repair of machinery	C
Cross.	6	P	33.13	Repair of electronic and optical equipment	C
Cross.	6	P	33.14	Repair of electrical equipment	C
Cross.	6	P	33.19	Repair of other equipment	C
Cross.	6	P	33.20	Installation of industrial machinery and equipment	C
Cross.	6	P	43.21	Electrical installation	F
Cross.	6	P	43.22	Plumbing, heat and air conditioning installation	F
Cross.	6	P	43.29	Other construction installation	F
Cross.	6	P	43.32	Joinery installation	F
Cross.	6	P	46.18	Agents specialised in the sale of other particular products	G
Cross.	6	P	46.19	Agents involved in the sale of a variety of goods	G
Cross.	6	P	46.52	Wholesale of electronic and telecommunications equipment and parts	G
Cross.	6	P	46.62	Wholesale of machine tools	G
Cross.	6	P	46.69	Wholesale of other machinery and equipment	G
Cross.	6	P	46.72	Wholesale of metals and metal ores	G
Cross.	6	P	46.73	Wholesale of wood, construction materials and sanitary equipment	G
Cross.	6	P	46.76	Wholesale of other intermediate products	G
Cross.	6	P	46.90	Non-specialised wholesale trade	G
Cross.	6	P	71.12	Engineering activities and related technical consultancy	M
Cross.	6	P	71.20	Technical testing and analysis	M
7. Infrastructures and maritime works					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Char.	7	P	08.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	B
Char.	7	P	08.12	Operation of gravel and sand pits; mining of clays and kaolin	B
Char.	7	P	09.90	Support activities for other mining and quarrying	B
Char.	7	P	23.61	Manufacture of concrete products for construction purposes	C
Char.	7	P	23.63	Manufacture of ready-mixed concrete	C
Char.	7	P	23.64	Manufacture of mortars	C
Char.	7	P	23.99	Manufacture of other non-metallic mineral products n.e.c.	C
Char.	7	P	38.21	Treatment and disposal of non-hazardous waste	E
Char.	7	P	41.20	Construction of residential and non-residential buildings	F
Char.	7	P	42.11	Construction of roads and motorways	F
Char.	7	P	42.12	Construction of railways and underground railways	F
Char.	7	P	42.13	Construction of bridges and tunnels	F
Char.	7	P	42.21	Construction of utility projects for fluids	F
Char.	7	P	42.22	Construction of utility projects for electricity and telecommunications	F
Char.	7	P	42.91	Construction of water projects	F
Char.	7	P	42.99	Construction of other civil engineering projects n.e.c.	F
Char.	7	P	43.11	Demolition	F
Char.	7	P	43.13	Test drilling and boring	F
Char.	7	P	43.21	Electrical installation	F
Char.	7	P	43.22	Plumbing, heat and air conditioning installation	F
Char.	7	P	43.34	Painting and glazing	F
Char.	7	P	43.99	Other specialised construction activities n.e.c.	F
Char.	7	P	46.73	Wholesale of wood, construction materials and sanitary equipment	G
Char.	7	P	46.77	Wholesale of waste and scrap	G
Char.	7	P	46.90	Non-specialised wholesale trade	G
Char.	7	P	47.30	Retail sale of automotive fuel in specialised stores	G
Char.	7	P	47.52	Retail sale of hardware, paints and glass in specialised stores	G
Char.	7	P	70.22	Business and other management consultancy activities	M
Char.	7	P	71.12	Engineering activities and related technical consultancy	M
Char.	7	P	74.90	Other professional, scientific and technical activities n.e.c.	M
Char.	7	P	77.32	Renting and leasing of construction and civil engineering machinery and equipment	N
Char.	7	P	82.99	Other business support service activities n.e.c.	N

(continues)

(continuation)

8. Maritime services					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Cross.	8	P	38.11	Collection of non-hazardous waste	E
Cross.	8	P	38.21	Treatment and disposal of non-hazardous waste	E
Cross.	8	P	38.32	Recovery of sorted materials	E
Cross.	8	P	45.11	Sale of cars and light motor vehicles	G
Cross.	8	P	45.19	Sale of other motor vehicles	G
Cross.	8	P	45.20	Maintenance and repair of motor vehicles	G
Cross.	8	P	45.31	Wholesale trade of motor vehicle parts and accessories	G
Cross.	8	P	45.32	Retail trade of motor vehicle parts and accessories	G
Cross.	8	P	45.40	Sale, maintenance and repair of motorcycles and related parts and accessories	G
Cross.	8	P	46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	G
Cross.	8	P	46.18	Agents specialised in the sale of other particular products	G
Cross.	8	P	46.19	Agents involved in the sale of a variety of goods	G
Cross.	8	P	46.38	Wholesale of other food, including fish, crustaceans and molluscs	G
Cross.	8	P	46.43	Wholesale of electrical household appliances	G
Cross.	8	P	46.44	Wholesale of china and glassware and cleaning materials (NACE 46442)	G
Cross.	8	P	46.45	Wholesale of perfume and cosmetics	G
Cross.	8	P	46.49	Wholesale of other household goods	G
Cross.	8	P	46.51	Wholesale of computers, computer peripheral equipment and software	G
Cross.	8	P	46.52	Wholesale of electronic and telecommunications equipment and parts	G
Cross.	8	P	46.62	Wholesale of machine tools	G
Cross.	8	P	46.63	Wholesale of mining, construction and civil engineering machinery	G
Cross.	8	P	46.69	Wholesale of other machinery and equipment	G
Cross.	8	P	46.72	Wholesale of metals and metal ores	G
Cross.	8	P	46.73	Wholesale of wood, construction materials and sanitary equipment	G
Cross.	8	P	46.75	Wholesale of chemical products	G
Cross.	8	P	46.76	Wholesale of other intermediate products	G
Cross.	8	P	46.77	Wholesale of waste and scrap	G
Cross.	8	P	46.90	Non-specialised wholesale trade	G
Cross.	8	P	47.11	Retail sale in non-specialised stores with food, beverages or tobacco predominating	G
Cross.	8	P	47.29	Other retail sale of food in specialised stores	G
Cross.	8	P	47.30	Retail sale of automotive fuel in specialised stores	G
Cross.	8	P	47.41	Retail sale of computers, peripheral units and software in specialised stores	G
Cross.	8	P	47.43	Retail sale of audio and video equipment in specialised stores	G
Cross.	8	P	47.51	Retail sale of textiles in specialised stores	G
Cross.	8	P	47.54	Retail sale of electrical household appliances in specialised stores	G
Cross.	8	P	47.61	Retail sale of books in specialised stores	G
Cross.	8	P	47.64	Retail sale of sporting equipment in specialised stores	G
Cross.	8	P	47.73	Dispensing chemist in specialised stores	G
Cross.	8	P	47.78	Other retail sale of new goods in specialised stores	G
Cross.	8	P	47.79	Retail sale of second-hand goods in stores	G
Cross.	8	P	47.91	Retail sale via mail order houses or via Internet	G
Cross.	8	P	58.11	Book publishing	J
Cross.	8	P	58.13	Publishing of newspapers	J
Cross.	8	P	58.14	Publishing of journals and periodicals	J
Cross.	8	P	61.10	Radio broadcasting	J
Cross.	8	P	61.20	Television programming and broadcasting activities	J
Cross.	8	P	61.90	Other telecommunications activities	J
Cross.	8	P	62.01	Computer programming activities	J
Cross.	8	P	62.02	Computer consultancy activities	J
Cross.	8	P	62.03	Computer facilities management activities	J
Cross.	8	P	62.09	Other information technology and computer service activities	J
Cross.	8	P	63.11	Data processing, hosting and related activities	J
Cross.	8	P	63.12	Web portals	J
Cross.	8	P	63.99	Other information service activities n.e.c.	J
Cross.	8	P	64.19	Other monetary intermediation	K
Cross.	8	P	64.20	Activities of holding companies	K
Cross.	8	P	64.92	Other credit granting	K
Cross.	8	P	65.11	Life insurance	K
Cross.	8	P	65.12	Non-life insurance	K
Cross.	8	P	66.21	Risk and damage evaluation	K
Cross.	8	P	66.22	Activities of insurance agents and brokers	K
Cross.	8	P	66.29	Other activities auxiliary to insurance and pension funding	K
Cross.	8	P	66.30	Fund management activities	K
Cross.	8	P	69.10	Legal activities	M
Cross.	8	P	69.20	Accounting, bookkeeping and auditing activities; tax consultancy	M
Cross.	8	P	70.21	Public relations and communication activities	M
Cross.	8	P	70.22	Business and other management consultancy activities	M
Cross.	8	P	71.11	Architectural activities	M
Cross.	8	P	71.12	Engineering activities and related technical consultancy	M
Cross.	8	P	71.20	Technical testing and analysis	M

(continues)

(continuation)

8. Maritime services					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Cross.	8	P	72.11	Research and experimental development on biotechnology	M
Cross.	8	P	72.19	Other research and experimental development on natural sciences and engineering	M
Cross.	8	P	72.20	Research and experimental development on social sciences and humanities	M
Cross.	8	P	73.11	Advertising agencies	M
Cross.	8	P	73.20	Market research and public opinion polling	M
Cross.	8	P	74.10	Specialised design activities	M
Cross.	8	P	74.20	Photographic activities	M
Cross.	8	P	74.90	Other professional, scientific and technical activities n.e.c.	M
Cross.	8	P	75.00	Veterinary activities	M
Cross.	8	P	77.12	Renting and leasing of trucks	N
Cross.	8	P	77.33	Renting and leasing of office machinery and equipment (including computers)	N
Cross.	8	P	77.39	Renting and leasing of other machinery, equipment and tangible goods n.e.c.	N
Cross.	8	P	78.10	Activities of employment placement agencies	N
Cross.	8	P	80.10	Private security activities	N
Cross.	8	P	80.20	Security systems service activities	N
Cross.	8	P	81.21	General cleaning of buildings	N
Cross.	8	P	81.22	Other building and industrial cleaning activities	N
Cross.	8	P	81.29	Other cleaning activities	N
Cross.	8	P	82.30	Organisation of conventions and trade shows	N
Cross.	8	P	82.99	Other business support service activities n.e.c.	N
Cross.	8	P	84.11	General public administration activities	O
Cross.	8	P	84.12	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security	O
Cross.	8	P	84.13	Regulation of and contribution to more efficient operation of businesses	O
Cross.	8	P	84.22	Defence activities	O
Cross.	8	P	84.24	Public order and safety activities	O
Cross.	8	P	84.25	Fire service activities	O
Cross.	8	P	84.30	Compulsory social security activities	O
Cross.	8	P	85.20	Primary education	P
Cross.	8	P	85.31	General secondary education	P
Cross.	8	P	85.32	Technical and vocational secondary education	P
Cross.	8	P	85.41	Post-secondary non-tertiary education	
Cross.	8	P	85.42	Tertiary education	P
Cross.	8	P	85.51	Sports and recreation education	P
Cross.	8	P	85.53	Driving school activities	P
Cross.	8	P	85.59	Other education n.e.c.	P
Cross.	8	P	86.21	General medical practice activities	Q
Cross.	8	P	86.22	Specialist medical practice activities	Q
Cross.	8	P	94.11	Activities of business and employers membership organisations	S
Cross.	8	P	94.99	Activities of other membership organisations n.e.c.	S
Cross.	8	P	95.11	Repair of computers and peripheral equipment	S
Cross.	8	P	95.12	Repair of communication equipment	S
Cross.	8	P	96.01	Washing and (dry-)cleaning of textile and fur products	S
9. New uses and resources of the ocean					
Observ. Level	Group	Inclusion	NACE class code	Description	NACE section
Exploration of unconventional energy resources: methane hydrates					
Marine biotechnology & Earth observation					
Char.	9	r	20.59	Manufacture of other chemical products n.e.c. (NACE 20593)	C
Char.	9	r	72.11	Research and experimental development on biotechnology	M
Char.	9	r	72.19	Other research and experimental development on natural sciences and engineering	M
Offshore renewable energy					
Char.	9	r	35.11	Production of electricity	D
Char.	9	r	35.13	Electricity distribution	D
Char.	9	r	70.22	Business and other management consultancy activities	M
Char.	9	r	71.12	Engineering activities and related technical consultancy	M
Char.	9	r	74.90	Other professional, scientific and technical activities n.e.c.	M
Gas storage					

Notes:

- (1) It includes Marine mineral resources and Conventional offshore marine energy resources (Oil and Natural gas)
(2) It includes sea, coastal and inland transportation
(3) It includes maritime, coastal and inland tourism; NACE 55 and 56 are applied only to coastal areas.

Note:



Codes based on the NACE rev.1.1 nomenclature, used in the study made for Eurostat in 2009, by Ifremer *et al.*, *Study on the field of maritime policy. Approach towards an Integrated Maritime Policy Database*, 2009

Annex IV – Sea products selected for SAS. CPA 2008 and National Accounts Products Classification (NPCN) correspondence with SAS by inclusion level, group and observation level

Table 13 - SAS products (CPA 2008 codes)

CPA 2008	National Accounts Product Nomenclature - Base 2011				SAS Inc.	SAS Group									SAS Observation level						
	P88	Designation	P433	Designation		1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity				
03.00.1	03	Fish and other fishing products; aquaculture products; support services to fishing	03001	Fish, live	T	x									x						
03.00.2			03002	Fish, fresh or chilled	T	x										x					
03.00.3			03003	Crustaceans, not frozen	T	x										x					
03.00.4			03004	Molluscs and other aquatic invertebrates, live, fresh or chilled	T	x										x					
03.00.5			03005	Pearls, unworked	T	x										x					
03.00.6			03006	Other aquatic plants, animals and their products	T	x										x					
03.00.7			03007	Support services to fishing and aquaculture	T	x								x		x					
07	07	Metal ores	07	Metal ores	P		x								x						
08.11	08	Other mining and quarrying products	0811	Ornamental and building stone, limestone, gypsum, chalk and slate	P		x					x			x						
08.12			0812	Gravel, sand, clays and kaolin	P		x						x			x					
08.91			08901	Chemical and fertiliser minerals (08.91)	P		x									x					
08.92			08902	Peat, Salt and pure sodium chloride; sea water, and Other mining and quarrying products n.e.c. (08.92+08.93+08.99)	08902	Peat, Salt and pure sodium chloride; sea water, and Other mining and quarrying products n.e.c. (08.92+08.93+08.99)	P		x								x				
08.93																					
08.99																					
09	09	Mining support services	09	Mining support services	P		x						x								
10.13	10	Food products	1013	Meat and poultry meat products	P	x									x						
10.2			102	Processed and preserved fish, crustaceans and molluscs	T	x										x					
10.20.1			1021	Fish, fresh, chilled or frozen, Crustaceans, molluscs and other aquatic invertebrates, frozen, prepared or preserved, Flours, meals and pellets, unfit for human consumption, and other products n.e.c. of fish or of crustaceans, molluscs or other aquatic invertebrates, Smoking and other preservation and preparation services for manufacture of fish products; sub-contracted operations as part of manufacturing of processed and preserved fish, crustaceans and molluscs (10.20.1+10.20.3+10.20.4+10.20.9)	1021	Fish, fresh, chilled or frozen, Crustaceans, molluscs and other aquatic invertebrates, frozen, prepared or preserved, Flours, meals and pellets, unfit for human consumption, and other products n.e.c. of fish or of crustaceans, molluscs or other aquatic invertebrates, Smoking and other preservation and preparation services for manufacture of fish products; sub-contracted operations as part of manufacturing of processed and preserved fish, crustaceans and molluscs (10.20.1+10.20.3+10.20.4+10.20.9)	T	x								x					
10.20.3																					
10.20.4																					
10.20.9																					
10.20.21																					
10.20.22			1022	Fish fillets, dried, salted or in brine, but not smoked, Fish livers and roes dried, smoked, salted or in brine; flours, meals and pellets of fish, fit for human consumption, Fish, dried, whether or not salted, or in brine, Fish, including fillets, smoked (10.20.21+10.20.22+10.20.23+10.20.24)	1022	Fish fillets, dried, salted or in brine, but not smoked, Fish livers and roes dried, smoked, salted or in brine; flours, meals and pellets of fish, fit for human consumption, Fish, dried, whether or not salted, or in brine, Fish, including fillets, smoked (10.20.21+10.20.22+10.20.23+10.20.24)	T	x								x					
10.20.23																					
10.20.24																					
10.20.25			1023	Fish, otherwise prepared or preserved, except prepared fish dishes, Caviar and caviar substitutes (10.20.25+10.20.26)	1023	Fish, otherwise prepared or preserved, except prepared fish dishes, Caviar and caviar substitutes (10.20.25+10.20.26)	T	x								x					
10.20.26																					
10.41			1041	Oils and fats	1041	Oils and fats	P	x									x				
10.41.1	104101	Animal oils and fats, their fractions, crude, Óleos, gorduras animais e vegetais brutos (except olive oil, crude) (10.41.1+10.41.21+10.41.22+ 10.41.24+ 10.41.25+10.41.26+10.41.27+10.41.28+10.41.29+10.41.3+10.41.4+10.41.9)			104101	Animal oils and fats, their fractions, crude, Óleos, gorduras animais e vegetais brutos (except olive oil, crude) (10.41.1+10.41.21+10.41.22+ 10.41.24+ 10.41.25+10.41.26+10.41.27+10.41.28+10.41.29+10.41.3+10.41.4+10.41.9)	P	x								x					
10.41.21																					
10.41.22																					
10.41.24																					
10.41.25																					
10.41.16																					
10.41.27																					
10.41.28																					
10.41.29																					
10.41.3																					
10.41.4																					
10.41.9																					
10.41.5	104103	Refined oils, except residues, Animal or vegetable fats and oils and their fractions, hydrogenated, esterified, but not further prepared, Vegetable waxes (excluding triglycerides); degreas; residues resulting from treatment of fatty substances or animal or vegetable waxes (10.41.5+10.41.6+10.41.7)	104103	Refined oils, except residues, Animal or vegetable fats and oils and their fractions, hydrogenated, esterified, but not further prepared, Vegetable waxes (excluding triglycerides); degreas; residues resulting from treatment of fatty substances or animal or vegetable waxes (10.41.5+10.41.6+10.41.7)	P	x									x						
10.41.6																					
10.41.7																					
10.84	1084-1089	Condiments and seasonings	1084	Condiments and seasonings	P	x	x								x						
10.85			1085	Prepared meals and dishes	P	x	x									x					
10.86			1086	Homogenised food preparations and dietetic food	P	x	x									x					
10.89			1089	Other food products n.e.c.	P	x	x									x					
10.9			109	Prepared animal feeds	P	x										x					
13.92			13	Textiles	1392	Made-up textile articles, except apparel	P						x					x			
13.94	1394	Cordage, rope, twine and netting			P							x					x				
13.96	1396	Other technical and industrial textiles			P							x					x				
13.99	1399	Other textiles n.e.c.			P							x					x				
14.13	14	Wearing apparel	1413	Other outerwear	P						x					x					
14.19			1419	Other wearing apparel and accessories	P							x					x				
14.3			143	Knitted and crocheted apparel	P							x					x				

(continues)

(continuation)

CPA 2008	National Accounts Product Nomenclature - Base 2011				SAS Inc.	SAS Group									SAS Observation level				
	P88	Designation	P433	Designation		1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity		
15.2	15	Leather and related products	152	Footwear	P						x						x		
16.29.12 16.29.13 16.29.14 16.29.25 16.29.91p 16.29.99p	16	Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	16025	Tools, tool bodies, tool handles, broom or brush bodies and handles, blocks for the manufacture of smoking pipes, boot or shoe lasts and trees, of wood, Tableware and kitchenware, of wood, Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (16.29.11 +16.29.12+ 16.29.13+ 16.29.14 + 16.29.25+p16.29.91+p16.29.99)	P												x		
18.1	18	Printing and recording	181	Printing services and services related to printing	P								x				x		
19.20.26p 19.20.99p	19	Coke and refined petroleum products	1924	Gas oils; Sub-contracted operations as part of manufacturing of refined petroleum products (p19.20.26+p19.20.99)	P			x									x		
19.20.42 19.20.99p			1927	Petroleum coke; Sub-contracted operations as part of manufacturing of refined petroleum products petroleum bitumen and other residues of petroleum oils; (19.20.42+p19.20.99)	P			x										x	
20.14	20	Chemicals and chemical products	2014	Other organic basic chemicals	P												x		
20.16			2016	Plastics in primary forms	P													x	
20.2			202	Pesticides and other agrochemical products	P														x
20.3			203	Paints, varnishes and similar coatings, printing ink and mastics	P														x
20.41			2041	Soap and detergents, cleaning and polishing preparations	P														x
20.51			2051	Explosives	P														x
20.59			2059	Other chemical products n.e.c.	P														x
22.11	22	Rubber and plastics products	2211	Rubber tyres and tubes; retreading and rebuilding of rubber tyres	P												x		
22.19			2219	Other rubber products	P													x	
22.21			2221	Plastic plates, sheets, tubes and profiles	P														x
22.22			2222	Plastic packing goods	P														x
22.23			2223	Builders' ware of plastic	P														x
22.29			2229	Other plastic products	P														x
23.11	23	Other non-metallic mineral products	23011	Flat glass (23.11)	P												x		
23.12			23012	Shaped and processed flat glass (23.12)	P														x
23.14			23014	Glass fibres (23.14)	P														x
23.19			23015	Other processed glass, including technical glassware (23.19)	P														x
23.41			23024	Ceramic household and ornamental articles (23.41)	P														x
23.51			23031	Cement (23.51)	P														x
23.52			23032	Lime and plaster (23.52)	P														x
23.61			23033	Concrete products for construction purposes (23.61)	P														x
23.62			23034	Plaster products for construction purposes (23.62)	P														x
23.63			23035	Ready-mixed concrete (23.63)	P														x
23.64			23036	Mortars (23.64)	P														x
23.65			23037	Fibre cement (23.65)	P														x
23.69			23038	Other articles of concrete, plaster and cement (23.69)	P														x
23.70			23041	Cut, shaped and finished stone (23.70)	P														x
23.9	23042	Other non-metallic mineral products (23.9)	P														x		
24.1	24	Basic metals	241	Basic iron and steel and ferro-alloys	P													x	
24.51			2451	Casting services of iron	P														x
24.52			2452	Casting services of steel	P														x
25.11	25	Fabricated metal products, except machinery and equipment	2511	Metal structures and parts of structures	P													x	
25.12			2512	Doors and windows of metal	P														x
25.29			2529	Other tanks, reservoirs and containers of metal	P														x
25.3			253	Steam generators, except central heating hot water boilers	P														x
25.4			254	Weapons and ammunition	P														x
25.61			2561	Treatment and coating services of metals	P														x
25.62			2562	Machining services	P														x
25.73			2573	Tools	P														x
25.9			259	Other fabricated metal products	P														x
26.11	26	Computer, electronic and optical products	26011	Electronic components and Loaded electronic boards (26.11 e 26.12)	P													x	
26.2			26012	Computers and peripheral equipment (26.2)	P														x
26.3			26021	Communication equipment (26.3)	P														x
26.4			26022	Consumer electronics (26.4)	P														x
26.51			26031	Measuring, testing and navigating equipment (26.51)	P														x
27.11	27	Electrical equipment	2711	Electric motors, generators and transformers	P													x	
27.12			2712	Electricity distribution and control apparatus	P														x
27.2			272	Batteries and accumulators	P														x
27.3			273	Wiring and wiring devices	P														x
27.9			279	Other electrical equipment	P														x

(continues)

(continuation)

CPA 2008	National Accounts Product Nomenclature - Base 2011			SAS Inc.	SAS Group									SAS Observation level					
	P88	Designation	P433		Designation	1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity		
47.00 except 47.00.81	47	Retail trade services, except of motor vehicles and motorcycles	4701	Retail trade services, except of motor vehicles and motorcycles and automotive fuel (47.00, except 47.00.81)	P	x	x			x	x	x	x		x	x			
46.71.12 47.00.81			4702	Wholesale trade services of motor spirit, including aviation spirit and of automotive fuel (46.71.12+47.00.81)	P	x										x			
49.2	49	Land transport services and transport services via pipelines	49012	Freight rail transport services (49.2)	P			x							x				
49.31 49.39.11 49.39.20			49021	Urban and suburban passenger land transport services, Other passenger land transport services n.e.c. and Passenger transport services by funiculars, teleferics and ski-lifts (49.31+49.39.11+49.39.20)	P			x	x							x			
49.32			49022	Taxi operation services (49.32)	P			x	x							x			
49.39.3			49023	Non-scheduled passenger land transport services (49.39.3)	P			x	x							x			
49.4			4903	Freight transport services by road and removal services (49.4)	P			x								x			
50.1	50	Water transport services	5001	Sea and coastal passenger water transport services (50.1)	T			x	x				x		x				
50.3			5002	Inland passenger water transport services (50.3)	T			x	x						x				
50.2 50.4			5003	Sea and coastal freight water transport services and Inland freight water transport services (50.2+50.4)	T			x							x				
52.1	52	Warehousing and support services for transportation	521	Warehousing and storage services	P	x		x							x				
52.21			5221	Services incidental to land transportation	P			x							x				
52.22			5222	Services incidental to water transportation	P			x	x				x			x			
52.24			5224	Cargo handling services	P			x								x			
52.29			5229	Other transportation support services	P			x								x			
53.2	532	Postal and courier services	532	Other postal and courier services	P			x							x				
55.1	55	Accommodation services	5501	Hotel and similar accommodation services (55.1)	P			x									x		
55.2 55.3 55.9			5502	Holiday and other short stay accommodation services, Camping ground, recreational vehicle park and trailer park services and Other accommodation services (55.2+55.3+55.9)	P			x										x	
56	56	Food and beverage serving services	56	Food and beverage serving services	P	x			x								x		
58.13 58.14	58	Publishing services	58102	Publishing services of newspapers and of journals and periodicals (58.13+58.14)	P								x				x		
60	60	Programming and broadcasting services	60	Programming and broadcasting services	P								x				x		
61.2	61	Telecommunications services	6101	Wireless telecommunications services (61.2)	P								x				x		
61.1 61.3 61.9			6102	Wired telecommunications services, Satellite telecommunications services and Other telecommunications services (61.1+61.3+61.9)	P									x				x	
62			62	Computer programming, consultancy and related services	62	Computer programming, consultancy and related services	P								x				x
63.11 63.12 63.99	63	Information services	6302	Data processing, hosting and related services, Web portal content and Other information services n.e.c. (63.11+63.12+63.99)	P									x			x		
64.19	64	Financial services, except insurance and pension funding	6419	Other monetary intermediation services	P								x				x		
64.20.10p			64201	Services of holding companies (p64.20.10)	P									x				x	
64.20.10p			64202	Services of holding companies (p64.20.10)	P										x				x
64.91			6491	Financial leasing services	P										x				x
64.92	6492	Other credit granting services	P										x				x		
65.11 65.2p	65	Insurance, reinsurance and pension funding services, except compulsory social security	65011	Life insurance services and Reinsurance services (65.11+p65.2)	P								x				x		
65.12 65.2p			65012	Serviços de seguros não vida (65.12+p65.2)	P									x				x	
65.3			653	Serviços de fundos de pensões e regimes profissionais complementares (65.3)	P									x					x
66.1	66	Services auxiliary to financial services and insurance services	661	Services auxiliary to financial services, except insurance and pension funding	P								x				x		
66.2			662	Services auxiliary to insurance and pension funding	P									x					x

(continues)

(continuation)

CPA 2008	National Accounts Product Nomenclature - Base 2011			SAS Inc.	SAS Group									SAS Observation level						
	P88	Designation	P433		Designation	1	2	3	4	5	6	7	8	9	Charac-teristics	Cross-cutting	Proxi-mity			
68.1 68.3	68	Real estate services	6801	Buying and selling services of own real estate and Real estate services on a fee or contract basis (68.1+68.3)	P				x							x				
68.20.11			68021	Rental and operating services of own or leased residential real estate(68.20.11)	P				x				x				x	x		
68.20.12			68022	Rental and operating services of own or leased non-residential real estate (68.20.12)	P			x	x					x				x	x	
			6803	Imputed rentals	P				x											x
69	69	Legal and accounting services	69	Legal and accounting services	P													x		
70	70	Services of head offices; management consulting services	70	Services of head offices; management consulting services	P	x			x				x	x			x	x		
71.1	71	Architectural and engineering services; technical testing and analysis	711	Serviços de arquitetura, de engenharia e técnicas afins	P		x	x	x	x	x	x	x	x			x	x		
71.2			712	Technical testing and analysis services	P		x			x	x	x	x					x	x	
72	72	Scientific research and development services	72	Scientific research and development services	P	x	x	x	x	x	x			x	x		x	x		
73.1	73	Advertising and market research services	731	Serviços de publicidade	P			x									x	x		
73.2			732	Market research and public opinion polling services	P														x	
74	74	Other professional, scientific and technical services	74	Other professional, scientific and technical services	P								x	x			x	x		
75	75	Veterinary services	75	Veterinary services	P													x		
77.11	77	Rental and leasing services	7711	Rental and leasing services of cars and light motor vehicles	P				x								x	x		
77.12			7712	Rental and leasing services of trucks	P					x								x	x	
77.2			772	Rental and leasing services of personal and household goods	P					x									x	
77.3			773	Rental and leasing services of other machinery, equipment and tangible goods	P				x	x									x	x
77.4			774	Licensing services for the right to use intellectual property and similar products, except copyrighted works	P					x										x
78	78	Employment services	78	Employment services	P				x									x		
79	79	Travel agency, tour operator and other reservation services and related services	79	Travel agency, tour operator and other reservation services and related services	P				x	x									x	
80	80	Security and investigation services	80	Security and investigation services	P													x		
81	81	Services to buildings and landscape	81	Services to buildings and landscape	P													x	x	
82	82	Office administrative, office support and other business support services	82	Office administrative, office support and other business support services	P					x								x	x	
84.1	84	Public administration and defence services; compulsory social security services	841	Administration services of the State and the economic and social policy of the community	P					x								x	x	
84.2			842	Provision of services to the community as a whole	P														x	x
84.3			843	Compulsory social security services	P															x
85.1 85.2 85.3 85.4 85.5 85.6	85	Education services	8501	Pre-primary education services, Primary education services, Secondary education services and Higher education services (85.1+85.2+85.3+85.4)	P													x		
			8502	Other education services and Educational support services (85.5+85.6)	P															x

(continues)

(continuation)

CPA 2008	National Accounts Product Nomenclature - Base 2011			SAS Inc.	SAS Group									SAS Observation level					
	P88	Designation	P433		Designation	1	2	3	4	5	6	7	8	9	Charac- teristics	Cross- cutting	Proxi- mity		
86	86	Human health services	86	Human health services	P												x		
87	87	Residential care services	87	Residential care services	P													x	
88	88	Social work services without accommodation	88	Social work services without accommodation	P													x	
90	90	Creative, arts and entertainment services	90	Creative, arts and entertainment services	P				x									x	
91	91	Library, archive, museum and other cultural services	91	Library, archive, museum and other cultural services	P				x									x	
93.1	93	Sporting services and amusement and recreation services	931	Sporting services	P				x									x	
93.2		932	Amusement and recreation services	P				x										x	
94.1	94	Services furnished by membership organisations	941	Services furnished by business, employers and professional membership organisations	P	x		x	x		x							x	
94.2			942	Services furnished by trade unions	P														x
94.9			949	Services furnished by other membership organisations	P	x		x	x										x
95.11	95	Repair services of computers and personal and household goods	9501	Repair services of computers and peripheral equipment (95.11)	P													x	
95.12 95.2			9502	Repair services of communication equipment and Repair services of personal and household goods (95.12+95.2)	P														x
96	96	Other personal services	96	Other personal services	P	x			x									x	

Legend:

SAS Inclusion: T - Total; P - Partial; r - Residual

SAS Group: 1. Fisheries, aquaculture, processing, wholesale and retail of its products

2. Non-living marine resources
3. Ports, transports and logistics
4. Recreation, sports, culture and tourism
5. Shipbuilding, maintenance and repair
6. Maritime equipment
7. Infrastructures and maritime works
8. Maritime services
9. New uses and resources of the ocean

SAS Observation level: Characteristic Activities; Crosscutting Activities; Activities favored by the proximity of the sea.



Totally included in SAS

Annex V – Main aggregates and variables definition – ESA 2010

Table 14 - SAS main aggregates and variables definition - ESA 2010

Code	Variable	Definition	ESA 2010 Manual page
Gross value added			
P.1	Output	<i>"3.14 Definition: output is the total of products created during the accounting period. Examples of output include the following: (a) the goods and services which one local KAU provides to a different local KAU belonging to the same institutional unit; (b) the goods produced by a local KAU that remain in inventories at the end of the period in which they are produced, whatever their subsequent use. Goods and services produced and consumed within the same accounting period and within the same local KAU are not separately identified. They are not recorded as part of the output or intermediate consumption of that local KAU."</i>	55
P.11	Market output	<i>"3.17 Definition: market output consists of output that is disposed of on the market or intended to be disposed of on the market."</i>	56
P.12	Output for own final use	<i>"3.20 Definition: output produced for own final use consists of goods or services that are retained either for own final consumption or for capital formation by the same institutional unit."</i>	57
P.13	Non-market output	<i>"3.23 Definition: non-market output is output that is provided to other units for free, or at prices that are not economically significant."</i>	57
P.131	Payments for non-market output (partial payments)	<i>"Non-market output is produced for the following reasons. (a) It may be technically impossible to make individuals pay for collective services because their consumption of such services cannot be monitored and controlled. The production of collective services is organised by government units and financed out of funds other than receipts from sales, namely taxation or other government incomes. (b) Government units and NPISHs may also produce and supply goods or services to individual households for which they could charge but choose not to do so as a matter of social or economic policy. Examples are the provision of education or health services, for free or at prices that are not economically significant."</i>	57
P.132	Non-market products others	<i>"Output provided for free."</i>	57
P.2	Intermediate consumption	<i>"3.88 Definition: intermediate consumption consists of goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. The goods and services are either transformed or used up by the production process."</i>	68
B.1g	Gross value added at basic prices	Gross-value added is a result from a statistical operation and it can be obtained by several ways. In the production approach, <i>"gross value-added is the difference between output and intermediate consumption by industry."</i> It is identical to the sum of the incomes generated. In the income approach the <i>"gross value-added equals the sum of compensation of employees, consumption of fixed capital, net operating surplus/mixed income, and other taxes less subsidies on production."</i> This enables the consistency of the income approach to measuring GVA and GDP to be checked with the production approach.	53 276

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Code	Variable	Definition	ESA 2010 Manual page
Expenditure side of gross domestic product			
P.3	Total final consumption expenditure	<i>"3.94 Definition: final consumption expenditure consists of expenditure incurred by resident institutional units on goods or services that are used for the direct satisfaction of individual needs or wants or the collective needs of members of the community."</i>	70
P.3	(a) Household final consumption expenditure	<i>"3.95 Household final consumption expenditure includes the following examples: (a) services of owner-occupied dwellings; (b) income in kind, such as: (1) goods and services received as income in kind by employees; (2) goods or services produced as outputs of unincorporated enterprises owned by households that are retained for consumption by members of the household. Examples are food and other agricultural goods, housing services by owner-occupiers and household services produced by employing paid staff (servants, cooks, gardeners, chauffeurs, etc.); (c) items not treated as intermediate consumption, such as: (1) materials for small repairs to and interior decoration of dwellings of a kind carried out by tenants as well as owners; (2) materials for repairs and maintenance to consumer durables, including vehicles; (d) items not treated as capital formation, in particular consumer durables, that continue to perform their function in several accounting periods; this includes the transfer of ownership of some durables from an enterprise to a household; (e) financial services directly charged and the part of FISIM used for final consumption purposes by households; (f) insurance services by the amount of the implicit service charge; (g) pension funding services by the amount of the implicit service charge; (h) payments by households for licenses, permits, etc. which are regarded as purchases of services (see paragraphs 4.79 and 4.80); (i) the purchase of output at not economically significant prices, e.g. entrance fees for a museum."</i>	70
P.3	Final consumption expenditure of NPISH	<i>"3.97 Final consumption expenditure of NPISHs includes two separate categories: (a) the value of the goods and services produced by NPISHs other than own-account capital formation and other than expenditure made by households and other units; (b) expenditures by NPISHs on goods or services produced by market producers that are supplied — without any transformation — to households for their consumption as social transfers in kind."</i>	71
P.3	Government final consumption expenditure	<i>"3.98 Final consumption expenditure (P.3) by government includes two categories of expenditures, similar to those by NPISHs: (a) the value of the goods and services produced by general government itself (P.1) other than own-account capital formation (corresponding to P.12), market output (P.11) and payments for non-market output (P.131); (b) purchases by general government of goods and services produced by market producers that are supplied to households, without any transformation, as social transfers in kind (D.632). General government pays for these goods and services that the sellers provide to households."</i>	71

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Code	Variable	Definition	ESA 2010 Manual page
Expenditure side of gross domestic product			
P.31	(a) Individual consumption expenditure	"3.105 Alternatively individual consumption expenditure of general government corresponds to division 14 of the classification of individual consumption by purpose (COICOP), which includes the following groups: 14.1 Housing (equivalent to COFOG group 10.6) 14.2 Health (equivalent to COFOG groups 7.1 to 7.4) 14.3 Recreation and culture (equivalent to COFOG groups 8.1 and 8.2) 14.4 Education (equivalent to COFOG groups 9.1 to 9.6) 14.5 Social protection (equivalent to COFOG groups 10.1 to 10.5 and group 10.7)."	72
P.32	b) Collective consumption expenditure	"3.106 Collective consumption expenditure is the remainder of the government final consumption expenditure. It consists of the following COFOG groups: (a) general public services (division 1); (b) defence (division 2); (c) public order and safety (division 3); (d) economic affairs (division 4); (e) environmental protection (division 5); (f) housing and community amenities (division 6); (g) general administration, regulation, dissemination of general information and statistics (all divisions); (h) research and development (all divisions).	72
P.4	Actual final consumption	"3.100 Definition: actual final consumption consists of the goods or services that are acquired by resident institutional units for the direct satisfaction of human needs, whether individual or collective."	71
P.5	Gross capital formation	"3.122 Gross capital formation consists of: (a) gross fixed capital formation (P.51g): (1) consumption of fixed capital (P.51c); (2) net fixed capital formation (P.51n); (b) changes in inventories (P.52); (c) acquisitions less disposals of valuables (P.53).	73
P.51g	(a) Gross fixed capital formation	"3.124 Definition: gross fixed capital formation (P.51) consists of resident producers' acquisitions, less disposals, of fixed assets during a given period plus certain additions to the value of non-produced assets realized by the productive activity of producer or institutional units. Fixed assets are produced assets used in production for more than one year."	73
P.51c	(a) (1) Consumption of fixed capital	"3.139 Definition: consumption of fixed capital (P.51c) is the decline in value of fixed assets owned, as a result of normal wear and tear and obsolescence. The estimate of decline in value includes a provision for losses of fixed assets as a result of accidental damage which can be insured against. Consumption of fixed capital covers anticipated terminal costs, such as the decommissioning costs of nuclear power stations or oil rigs or the cleanup costs of landfill sites. Such terminal costs are recorded as consumption of fixed capital at the end of the service life, when the terminal costs are recorded as gross fixed capital formation."	76
P.52	(b) Changes in inventories	"3.146 Definition: changes in inventories are measured by the value of the entries into inventories less the value of withdrawals and the value of any recurrent losses of goods held in inventories."	77
P.53	(c) Acquisitions less disposals of valuables	"3.154 Definition: valuables are non-financial goods that are not used primarily for production or consumption, do not deteriorate (physically) over time under normal conditions and are acquired and held primarily as stores of value."	78

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Code	Variable	Definition	ESA 2010 Manual page
Expenditure side of gross domestic product			
P.6	Exports of goods (fob) and services	"3.158 Definition: exports of goods and services consist of transactions in goods and services (sales, barter, and gifts) from residents to non-residents."	78
P.61	(a) Goods	"3.162 Imports and exports of goods occur when economic ownership of goods changes between residents and non-residents. This applies irrespective of corresponding physical movements of goods across frontiers."	80
P.62	(b) Services	"3.171 Definition: exports of services consist of all services rendered by residents to non-residents. "	81
P.7	Imports of goods (fob) and services	"3.159 Definition: imports of goods and services consist of transactions in goods and services (purchases, barter, and gifts) from non-residents to residents."	78
P.71	(a) Goods	"3.162 Imports and exports of goods occur when economic ownership of goods changes between residents and non-residents. This applies irrespective of corresponding physical movements of goods across frontiers."	80
P.72	(b) Services	"3.172 Definition: imports of services consist of all services rendered by non-residents to residents."	81
B.11	External balance of goods and services	"8.68 [...] The difference between resources and uses is the balancing item in the account, called 'external balance of goods and services'. If it is positive, there is a surplus for the rest of the world and a deficit for the total economy and vice versa if it is negative."	251
Gross operating surplus and gross mixed income, taxes on production and imports, subsidies			
B.2g + B.3g	Gross operating surplus and gross mixed income	<p>"4.10.1. Gross operating surplus is generally a balance and not a heading calculated independently, its value being obtained by means of the following formula:</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> $\text{Gross Operating Surplus (GOS)} = \text{GVA} - \text{Compensation of employees (D.1)} - \text{Other taxes on production (D.29)} + \text{Other subsidies on production (D.39)}$ </div>	PNA, Inventory
D.2	Taxes on production and imports	"4.14 Definition: taxes on production and imports (D.2) consist of compulsory, unrequited payments, in cash or in kind, which are levied by general government, or by the institutions of the European Union, in respect of the production and importation of goods and services, the employment of labour, the ownership or use of land, buildings or other assets used in production. Such taxes are payable irrespective of profits made."	92
D.211	Value added type taxes (VAT)	"4.17 Definition: a value added type tax (VAT) is a tax on goods or services collected in stages by enterprises and which is ultimately charged in full to the final purchaser."	92
D.21	Taxes on products	"4.16 Definition: taxes on products (D.21) are taxes that are payable per unit of a given good or service produced or transacted. The tax may be a specific amount of money per unit of quantity of a good or service, or it may be calculated as a specified percentage of the price per unit or value of the goods and services produced or transacted. Taxes assessed on a product, irrespective of which institutional unit pays the tax, are included in taxes on products, unless specifically included under another heading".	92
D.3	Subsidies	"4.30 Definition: subsidies (D.3) are current unrequited payments which general government or the institutions of the European Union make to resident producers."	95

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Code	Variable	Definition	ESA 2010 Manual page
Population, employment, compensation of employees			
Employment	Employment in resident production units	"11.11 <i>Definition: employment covers all persons engaged in productive activity that falls within the production boundary of the national accounts.</i> "	307
		"11.32 <i>Definition: full-time equivalent employment, which equals the number of full-time equivalent jobs, is defined as total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory.</i> "	311
Self-employed	Self employed	"11.15 <i>Definition: self-employed persons are defined as persons who are the sole owners, or joint owners, of the unincorporated enterprises in which they work, excluding those unincorporated enterprises that are classified as quasi-corporations. Persons having both an employee job and a job as a self-employed person are classified here if the self-employed job constitutes their principle activity by income.</i> "	307-308
Employee	Employees	"11.12 <i>Definition: employees are defined as persons who, by agreement, work for a resident institutional unit and receive a remuneration recorded as compensation of employees.</i> "	307
D.1	Compensation of employees working in resident production units and compensation of resident employees	"4.02 <i>Definition: compensation of employees (D.1) is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during an accounting period. "</i> <i>"Compensation of employees is made up of the following components:</i> (a) <i>wages and salaries (D.11):</i> - <i>wages and salaries in cash,</i> - <i>wages and salaries in kind;</i> (b) <i>employers' social contributions (D.12):</i> - <i>employers' actual social contributions (D.121): - employers' actual pension contributions (D.1211),</i> - <i>employers' actual non-pension contributions (D.1212),</i> - <i>employers' imputed social contributions (D.122): - employers' imputed pension contributions (D.1221),</i> - <i>employers' imputed non-pension contributions (D.1222).</i>	87
D.11	(a) Wages and salaries	" 4.03 Wages and salaries in cash include social contributions, income taxes, and other payments payable by the employee, including those withheld by the employer and paid directly to social insurance schemes, tax authorities, etc. on behalf of the employee " "4.04 <i>Definition: wages and salaries in kind consist of goods and services, or other non-cash benefits, provided free of charge or at reduced prices by employers, that can be used by employees in their own time and at their own discretion, for the satisfaction of their own needs or wants or those of other members of their households.</i> "	87
D.12	(b) Employers' social contributions	"4.08 <i>Definition: employers' social contributions are social contributions payable by employers to social security schemes or other employment-related social insurance schemes to secure social benefits for their employees.</i> "	89

Annex VI – Data sources and algorithms used in SAS calculations by institutional sector

Table 15 - SAS main data sources and algorithms, by institutional sector

I: Production account		S11+S14		S12		S13		S15	
		Source	Algorithm	Source	Algorithm	Source	Algorithm	Source	Algorithm
P.1	Output	-	P.111 - P.21 + P.112 + P.113 + P.114 + P.12 + P.13	-	P.111 - P.21 + P.112 + P.113 + P.114 + P.12 + P.13	-	P.11 + P.12 + P.13	-	P.2 + D.1 + P.51c – D.39
P.11	Market output	SBI/IES (Annexes A and D) and OCIP	Sales of goods ¹⁾ - Costs of goods sold ²⁾ +Sales of products ¹⁾ + Sales of biological assets ¹⁾ + Production variations + Provision of services + Supplementary income + Other incomes and earnings + Rentals and other incomes in investment properties – Rents on land	-	-	SBI/IES (Annexes A and D) and detailed Trial balance reports	Sales of goods - Costs of goods sold + Sales of products + Sales of biological assets + Production variations + Provision of services + Supplementary income + Other incomes and earnings + Rentals and other incomes in investment properties – Rents on land	SBI/IES (Annexes A and D), OCIP and IASM	Sales of products + Sales of biological assets + Production variations + Supplementary income + Other incomes and earnings + Rentals and other incomes in investment properties – Rents on land
P.12	Output for own final use	SBI/IES (Annexes A and D) and OCIP IPCTN	Buildings and other constructions + Basic equipment + Transport equipment + Tools and equipment + Office equipment + Returnable containers + Other tangible fixed assets + Assets in progress + Software + Real estate investments	-	-	SBI/IES (Annexes A and D) and detailed Trial balance reports IPCTN	Buildings and other constructions + Basic equipment + Transport equipment + Tools and equipment + Office equipment + Returnable containers + Other tangible fixed assets + Assets in progress + Software + Real estate investments	SBI/IES (Annexes A and D), OCIP and IASM IPCTN	Buildings and other constructions + Basic equipment + Transport equipment + Tools and equipment + Office equipment + Returnable containers + Other tangible fixed assets + Assets in progress + Software + Real estate investment
P.13	Non-market output	-	-	-	-	Estima-tions	P.131 + P.132 Where P.132 = P.2 + D.1 + P.51c + D.29 paid – P.11 – P.12 – P.131 – D.39 received	Estima-tions	P.2 + D.1 - D.39 + P.51c - P.11 - P.12

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I: Production account		S11+S14		S12		S13		S15	
		Source	Algorithm	Source	Algorithm	Source	Algorithm	Source	Algorithm
P.2	Intermediate consumption	SBI/IES (Annexes A and D) and OCIP	Cost of materials consumed and biologic assets ²⁾ + Supplies and external services ²⁾ - Rentals on land – Insurances + Levies + Other operating expenses and losses + Working cloths + Training			SBI/IES (Annexes A and D) and detailed Trial balance reports	Cost of materials consumed and biologic assets + Supplies and external services - Rentals on land – Insurances + Levies + Other operating expenses and losses + Working cloths + Training + FISIM	SBI/IES (Annexes A and D), OCIP and IASM	Cost of materials consumed and biologic assets + Supplies and external services - Rentals on land – Insurances + Levies + Other operating expenses and losses + Working cloths + Training
B.1g	Gross Value Added (GVA)		P.1 - P.2		P.1 - P.2		P.1 - P.2		P.1 - P.2
P.51c	Consumption of fixed capital	Estima-tions	P.51c NA * P.51 SAS / P.51 NA			Estima-tions and detailed Trial balance reports	P.51c NA * P.51 SAS / P.51 NA	Estima-tions	P.51c NA * P.51 SAS / P.51 NA

Notes:

IASM - Survey to the Mutual Societies (*Inquérito às associações de socorros mútuos*)

IPCTN – Survey on National Scientific and Technological Potential (*Inquérito ao Potencial Científico e Tecnológico Nacional*)

OCIP - Budgets and Accounts of Private Institutions of Social Solidarity (*Orçamentos e contas de IPSS*)

SBI/IES - Simplified Business Information (*Informação Empresarial Simplificada*)

1) For Annex A information provided to P.111, P.113 and to the sum of Sales of finished products, intermediate products, by-products, waste and scrap and of Sale of biological assets from P.112, it is necessary to subtract the weighting 1 resulting from the division of Financial discounts granted payment and the sum of sale of goods, sale of finished and intermediate products, by-products, waste and scrap, sale of biological assets, Provision of Services and Other income and gains.

2) For Annex A information provided to P.21, P.22 and external service delivery component of P.23, it is necessary to subtract the weighting of the division between Cash discounts obtained and the sum of Cost of goods sold, Cost of materials consumed, Cost of biological assets, External supplies and services and Other expenses and losses.

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II.1.1: Generation of income account		S11+S14		S12		S13		S15	
		Source	Algorithm	Source	Algorithm	Source	Algorithm	Source	Algorithm
B.1g	Gross Value Added (GVA)		B.1g		B.1g		B.1g		B.1g
D.1	Compensation of employees		D.11 + D.12		D.11 + D.12		D.11 + D.121 + D.122		D.11 + D.12
D.11	Wages and salaries	SBI/IES (Annexes A and D) and OCIP	Corporate bodies salaries + Employees salaries + Social contributions + Bonus with managers and staff			SBI/IES (Annexes A and D) and detailed Trial balance reports	Corporate bodies salaries + Employees salaries + Social contributions	SBI/IES (Annexes A and D), OCIP and IASM	Corporate bodies salaries + Employees salaries + Social contributions + Bonus with managers and staff
D.12	Employers' social contributions	SBI/IES (Annexes A and D) and OCIP	Pension premiums + Social charges + Insurance schemes for accidents at work and occupational diseases + Compensations + Other personal expenses – Working cloths – Training			SBI/IES (Annexes A and D) and detailed Trial balance reports	Pension premiums + Social charges + Insurance schemes for accidents at work and occupational diseases + Compensations + Other personal expenses – Working cloths – Training	SBI/IES (Annexes A and D), OCIP and IASM	Pension premiums + Social charges + Insurance schemes for accidents at work and occupational diseases + Compensations + Other personal expenses – Working cloths – Training
D.121	Employer's actual social contribution					IES/SBI (Annexes A and D)	Employers' actual pension contributions (D.1211) + Employers' actual non-pension contributions (D.1212)		
D.122	Employer's imputed social contribution					Government transfer to CGA ³⁾	Employers' imputed pension contributions (D.1221) + Employers' imputed non-pension contributions (D.1222)		

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II.1.1: Generation of income account		S11+S14		S12		S13		S15	
		Source	Algorithm	Source	Algorithm	Source	Algorithm	Source	Algorithm
D.29	Other taxes on production	SBI/IES (Annexes A and D) and OCIP ⁴⁾	D.29 NA * P1 SAS / P1 NA	-	-	-	-	SBI/IES (Annexes A and D), OCIP and IASM	D.29 NA * P1 SAS / P1 NA
D.39	Other subsidies on production	IEFP, ESF, SS, IFAP and <i>Turismo de Portugal, I.P.</i> ⁵⁾	-	-	-	IEFP, ESF, SS, IFAP ³⁾	-	IEFP, ESF, SS, IFAP and <i>Turismo de Portugal, I.P.</i> ³⁾	-
B.2g	Operating surplus, gross	-	B.1g - D.1 - D.29 + D.39	-	B.1g - D.1 - D.29 + D.39	-	B.1g - D.1 - D.29 + D.39	-	B.1g - D.1 - D.29 + D.39

Notes:

3) CGA - *Caixa Geral de Aposentações* (General Retirement Fund)

4) Annex A: Direct Taxes; Annex D: weight of other expenses and losses; OCIP: share of Total taxes.

5) IEFP - Employment and Vocational Training Institute; ESF - European Social Fund ; SS - Social Security; IFAP – *Instituto de Financiamento da Agricultura e Pescas* (Institute of finance for agriculture and fisheries).

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III.1.2: Acquisition of non-financial assets account		S11+S14		S12		S13		S15	
		Source	Algorithm	Source	Algorithm	Source	Algorithm	Source	Algorithm
P.5	Gross capital formation	SBI/IES (Annexes A and D) and OCIP and others	P.51 + P.52 + P.53		P.51 + P.52 + P.53		P.51 + P.52 + P.53		P.51 + P.52 + P.53
P.51	Gross fixed capital formation	SBI/IES (Annexes A and D) and OCIP IPCTN	<i>Intangible and tangible assets (First Hand Aquis. + Other Aquis. + TPE + Other) + Investment Property + Non-current assets held for sale-Disposals</i>			SBI/IES Detailed Trial balance reports IPCTN	P.51	SBI/IES (Annexes A and D) and OCIP IPCTN	Gains-Disposals: Software + Buildings and Other Constructions + Basic Equipment + Transport Equipment + Tools and Features + Adm. Equipment + Returnable Containers + Other Tangible Fixed Assets + On-going Works
P.52	Changes in inventories	SBI/IES (Annexes A and D) and OCIP	<i>Goods Balance + Raw Materials + Products</i>			Detailed Trial balance reports	P.52		-
P.53	Acquisitions less disposals of valuables (ACOV)	External Trade	-			Detailed Trial balance reports	P.53		-
P.51c	Consumption of fixed capital	Estimations	-			Estimations	-	Estimations	-