DG Mare - Assistance in elaboration and prospective evaluation of the Atlantic Action Plan – Phase 2

Baseline report

Final version

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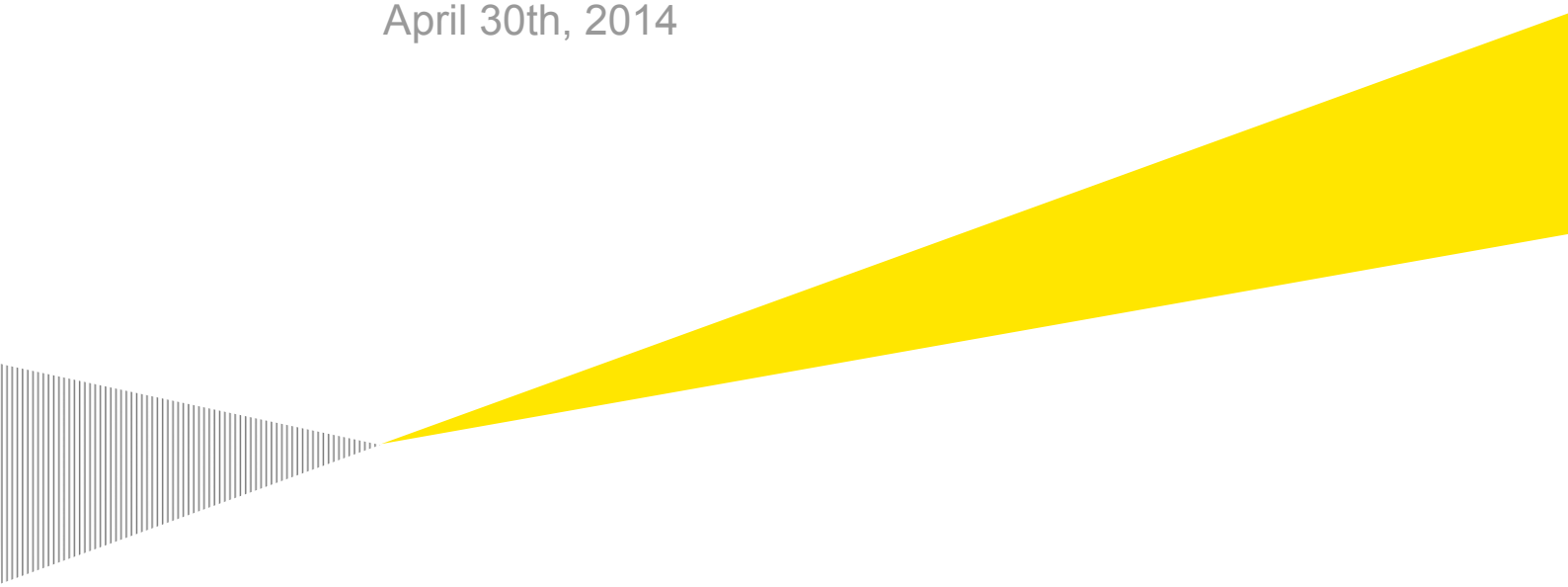

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Contents

Introduction

This document presents the baseline situation, i.e. an overview of the current (as-is) situation, in the Atlantic area in particular regarding the priorities and objectives of the Atlantic Action Plan.

More precisely, this document contains:

- A general contextual presentation of the Atlantic area and of the context of the elaboration of the Atlantic Action Plan
- A short description of the approach used to elaborate the baseline
- A baseline for impact and results indicators identified in the Indicators report
- Examples of recent flagship projects in the Atlantic area responding to the operational objectives of the Atlantic Action Plan and implemented since 2009

This report has been elaborated in parallel with the Indicators report. The latter includes details on the monitoring and evaluation framework suggested for the Atlantic Action Plan. It is indissociable from the present Baseline report, as it provides the rationale behind the choice of indicators used in this baseline report and as well as their key characteristics.

Background

The European Atlantic area consists of five Member States, Ireland, UK, France, Spain and Portugal. Together the five countries have more than thirty regions facing the Atlantic. The Atlantic area is home to 56 million Europeans and covers 594000 km²[1]. The Atlantic gross national product amounts to 1.500 bPPS[2]

With the aim to create growth in the region, this report develops a Strategy for the Atlantic area and later an Action Plan for the Atlantic. This objective is to create "blue" growth in the sense that this growth is directly or indirectly related to maritime activities.

The Action Plan aims at visualizing how the EU's Atlantic Member States, their regions and the Commission can support the creation of sustainable growth in coastal regions and drive forward the "blue economy", while preserving the environmental and ecological status in the Atlantic Ocean.

Table 1 Overview of the Atlantic regions

Atlantic regions per Member State
France: Haute-Normandie; Basse-Normandie; Pays de la Loire; Bretagne; Poitou-Charentes; Aquitaine
Ireland: Border, Midland and Western; Southern and Eastern
Portugal: Norte; Algarve; Centro (PT); Lisboa; Alentejo; Região Autónoma dos Açores (PT); Região Autónoma da Madeira (PT)
Spain: Galicia; Principado de Asturias; Cantabria; País Vasco; Comunidad Foral de Navarra; Andalucía; Canarias (ES)
UK: Cumbria, Cheshire, Greater Manchester, Lancashire, Merseyside, Gloucestershire, Wiltshire and North Somerset, Dorset and Somerset, Cornwall and Isles of Scilly, Devon, West Wales and The Valleys, East Wales, South Western Scotland, Highlands and Islands, Northern Ireland.

The Atlantic Action Plan seeks to encourage Member States to cooperate together more intensively in order to address common challenges to develop the maritime economy. The Action Plan contains several initiatives to create platforms and fora aiming at sharing knowledge, best practices and information. The sectors that the actions target are both traditional, such as fisheries, aquaculture, tourism and shipping, as well as emerging ones such as offshore renewables and marine biotech.

Initiatives of cooperation between the Member States along the Atlantic coast have existed for several years now. Created in 1989, the Atlantic Arc Commission seeks to promote closer cooperation between member states and regions along the Atlantic coast on specific questions of the maritime economy (transportation, energy, fisheries,…). More recently, the Atlantic Area Transnational Cooperation Programme has emerged as a significant platform for cooperation among regions of Europe's Atlantic coast. Furthermore, numerous less formal links of cooperation exist between Atlantic institutions, businesses and organisations. The Atlantic Action Plan defines a strategy for improving the cooperation in specific areas.

The definition phase of the Action Plan included five workshops. The workshops served as a platform for discussion among stakeholders from the Atlantic regions – public administrations, research centers, enterprises. Each workshop was held in a different Member State and its program was defined by the Member State and DG MARE matching the themes of the strategy with the organizing Member State's national specifics. Thus, the workshops presented numerous perspectives on the challenges and

[1] 2005; link:
http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=PT&gv_reg=ALL&gv_PGM=1256&LAN=7&gv_per=2&gv_defL=7

[2] Billion purchasing power standards; 2010; extracted from Eurostat data table "nama_r_e2gdp"

opportunities related to the Atlantic regions, encompassing scientific, technological and socio-economic aspects. More precisely, the themes of the workshops were:

- 21/09/2012: Horta (Ilha do Faial, Azores), Portugal: Coastal and deep sea resources
- 29-30/10/2012: Brest, France: Innovation at the service of a low carbon economy
- 12/11/2012: Bilbao, Spain: Ocean services and climate change mitigation under the ecosystem approach
- 24/01/2013: Cardiff, UK: Reducing carbon footprint and achieving socially inclusive economic growth
- 04-05/03/2013: Cork, Ireland: Research and innovation, ports and overview of the Action Plan

A brief summary of the discussions held during the workshops and the outcomes are presented in the box below.

Figure 1 Short resumes of workshops organised during the preparation of the Atlantic Action Plan

In the first workshop in **Horta,** the discussion related to the exploitation and utilisation of mineral and genetic resources for pharmaceutical purposes, for instance. The discussion showed that the Atlantic faces two main challenges: first, the depth of the water makes the exploitation of the resources more complicated and costly than from other geographies. The second - and related- challenge is the fragmented mapping of the Atlantic seabed. This makes it difficult to gather information on the presence of deep-sea natural resources, which are quickly emerging as a key arena for natural resource exploitation worldwide.

In **Brest,** the theme of the workshop was divided into three sessions: renewable energy, sustainable transport and maritime safety and security. The discussion on renewable energy showed that while different explorative initiatives were driven by national or private stakeholders, the Atlantic region had no single strategy for the region as to the type of technology and the level of energy production with each Member State having a strategy. A similar trend can be observed for sustainable transport. Some Member States are developing new types of technology for ships to optimize the use of energy. At the same time, all regions would benefit from increasing ship transport in general and short sea shipping specifically, increasing the number of ships calling Atlantic ports. Another goal is to foster the cooperation between ports aiming at improving their specialization and avoiding competition on the same parameters. Connection with the hinterland, e.g. through TEN-T projects, will be another key axis of the development of ports over the coming years. Finally, the discussion on safety and security dealt very much with the development of new information and communication technologies such as surveillance systems and navigation aid.

The workshop in **Bilbao** discussed issues of renewable energy, safety at sea and transport (see above for the issues discussed and the state of play), overlapping somewhat with the Brest workshops. In addition to these subjects, the workshop also addressed an ecosystem approach to fisheries management. Fishery is currently controlled by the EU and each Member State follows the quotas given by the EU without appeal. A key question in this regard is if there is potential for improvement from discussions at the regional level on the way fishing is performed and regulated.

In **Cardiff** additional issues such as sea food and tourism were discussed. These themes cover a broad swath economic activities and it is therefore difficult to generalize based on the discussions. It was however clear that to create growth in the region there is a need for a diversity including the traditional sectors and well as the new emerging ones. Diversity of activity, in addition to adequate educational possibilities, is among the key factors in attracting tourists and labor to a region. The general impression was that it is important to create room for niches as well as mainstreaming sectors.

The final workshop in **Cork** considered research across all of the themes of the strategy. The discussion identified some focus areas for mutual research goals for the coming period, such as seabed mapping, deep sea mining, surveillance technologies and improvement of the understanding of the ecosystem in the Atlantic Ocean to support the implementation of the marine strategy framework directive (MSDF).

The issue of having a funding mechanism specially designed for the Atlantic region was discussed on several occasions but it was assessed that the existing instruments should be sufficient for supporting the implementation of the Action Plan.

Following these discussions, the Action Plan was defined to address the challenges of delivering growth, reducing the carbon footprint, using the sea's natural resources in a sustainable way, responding effectively to threats and emergencies and implementing an "ecosystem" management approach in Atlantic waters. More concretely, the Action Plan includes four targets:

- Promote entrepreneurship and innovation;
- Protect, secure and enhance the marine and coastal environment;
- Improve accessibility and connectivity;
- Create a socially inclusive and sustainable model of regional development;

The agreed actions will, among others, focus on expanding the tourism sector, meeting the increasing demand for offshore installations, improving education and training in traditional and emerging maritime industries, as well as extending cooperation in the field of oceanic research in order to better assess climate change impacts.

The present report aims at establishing a baseline situation for the Atlantic area as of the beginning of the implementation of the Atlantic Action Plan. The baseline is built on the presentation of values for a set of indicators, which were defined as those most suitable for the future monitoring and evaluation of the Atlantic area’s progress in terms of the objectives of the Atlantic Action Plan. Detailed descriptions of the indicators and the rationale for their selection are presented in a separate Indicators report, elaborated and validated by the DG MARE prior to this Baseline report.

1 Overview of the indicators linked to the AAP

1.1 Presentation of the performance framework

A performance framework was established to prepare for future monitoring and evaluation of the progress done towards achieving the priorities and objectives of the Atlantic action plan. This performance framework was structured in three levels – impacts, results and outputs expected in the Atlantic Action Plan for the Atlantic area. Logical links between the 3 levels were identified even beyond the structure foreseen by the Atlantic Action Plan and are described in the intervention logic included in the Indicators report. The link between the indicators and the priorities and objectives of the Atlantic Action Plan is provided in the respective column of the two tables below.

Overall, 6 impact and 28 result indicators were defined and their baseline values are included and detailed in further chapters of this report. The following two tables represent an overview of the indicators and their baseline values.

Baseline data for each indicator was collected at the lowest geographical scale available for all 5 Member States and 36 regions or the Atlantic area as a whole (see 'Geographic coverage' column).

For most indicators, data was available on the NUTS 2 level corresponding to the Atlantic regions. However for several indicators, data was only available on the Member States level. As the two following tables aim at providing a general overview with a single baseline value per indicator for the Atlantic area, the data for regions or Member States was aggregated. Depending on the type of indicator, the aggregation was done by either summing up the values along the geographic level (regions or Member States) or, where applicable, through presenting the range of values (minimum and maximum) and the average value. A simple arithmetic average was then calculated.

A third case are indicators which relate the Atlantic area as a whole (e.g. Number of short sea routes or Completion status of TEN-T infrastructure priority projects, Number of vessels involved in accidents across the Atlantic Area) and are therefore represented through a summary value (sum or status) describing all of the area.

For further details, please refer to the Indicators guidelines.

1.2 Key impact indicators

Six impact indicators are considered as key indicators:

Expected impact	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value (*)	Ref. year
More competitive economy thanks to "blue economy"	1	**GDP in Atlantic regions**	€ / inhabitant	*Eurostat*	*NUTS2*	*All priorities Focus: Priority 1*	Range across Atlantic regions (NUTS 2): 13 000 - 39 990 Average across Atlantic regions (NUTS 2): 25 586	2011
	2	**Enterprise birthrate**	Number of enterprises	*Eurostat*	*Member states*		923 255 altogether in the 5 Member States of the Atlantic area	2011

Expected impact	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value (*)	Ref. year
Reduced impact of climate change/ Reduced carbon footprint in the Atlantic regions	**3**	**Greenhouse gas (GHG) emissions in the Atlantic area**	CO2 equivalents	*Eurostat*	*Member states*	PRIORITY 2: Protect, secure and develop the potential of the Atlantic marine and coastal environment	1 516 119 tonnes (2)	2011
Better health, social inclusion and wellbeing of coastal populations	**4**	**Unemployment rate**	unemployment rate	*Eurostat*	*NUTS2*	PRIORITY 4: Create a socially inclusive and sustainable model of regional development	Range (2): 4,6% - 34,6% Average(1): 12,8%	2012
	5	**Employment rate**	% of population	*Eurostat*	*NUTS2*		Range (2): 46,4% - 75,5% Average (1): 63,9%	2012
	6	**Life expectancy at birth**	mean number of years	*Eurostat*	*NUTS2*		Range across Atlantic regions: 76,3 - 84 Average (1): 80,8	2010

1.3 Key result indicators

28 indicators are considered as key indicators:

Expected result	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value	Ref. year
Increasing the capacity of the Atlantic area to innovate through research and technology	**7**	**Number of enterprises cooperating with research institutions**	Number of enterprises	*DG REGIO*	*NUTS 2, NUTS 3*	1.1	see indicator 7 (proxy A)	
	8	**Number of research institutions participating in cross-border, transnational or interregional research projects**	Number of organisations	*DG REGIO*	*NUTS 2, NUTS 3*	1.1	see indicator 7 (proxy B)	
	7 (proxy A)	**Enterprises co-operating with universities or other higher education institutions**	Number of enterprises	Eurostat	Member States	1.1	Total: 6620 Range: 317 - 3056	2010
	7 (proxy B)	**Enterprises co-operating with consultants, commercial labs, or private R&D institutes**	Number of enterprises	Eurostat	Member States	1.1	Total: 6626 Range: 364-3387	2010

Expected result	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value	Ref. year
	8 (proxy)	**Enterprises engaged in any type of innovation co-operation with a partner in EU countries, EFTA or EU candidates countries (except a national partner)**	Number of enterprises	Eurostat	Member States	1.1	Total: 6407 Range: 568-3852	2010
	9	**Total intramural R&D expenditure (GERD)**	% of GDP	Eurostat	NUTS 2	1.1	Range across Atlantic regions : 0,24 - 6,28 Average: 1,37	2010
	10	**Patent applications to the EPO by priority year**	Number of applications per million of inhabitants	Eurostat	NUTS 2	1.2	Range across Atlantic regions : 0,958 - 78,562 Average: 22,4	2010
Improving skills and attractiveness in traditional Atlantic industries	**11**	**Employment in technology and knowledge-intensive sectors**	% of total employmen t	*Eurostat*	*NUTS 2*	1.2	27 689	2012
Development of ports as hubs of the blue economy	**12**	**Volume of short-sea shipping in the Atlantic area**	thousands of tonnes	Eurostat	Member States	3.1	11 M TEUs	2011
	13	**Number of short sea routes**	Number	European Atlas of theSeas	Member States	3.1	4 (established as part of Marco Polo Programme)	2014
	14	**Completion status of TEN-T infrastructure priority projects**	Percentage	TEN-T: Progess report – Implementa tion of the TEN-T Priority Projects	Member States	3.1	35 - 100%	2011
	15	**Number of cruise passengers**	thousands of passengers	*Eurostat*	*NUTS 2*	3.1	1.3 million	2012
	16	**Maritime transport of freight**	1000 tonnes	*Eurostat*	*NUTS 2*	3.1	631 Mtonnes	2011
Accelerated development of sustainable offshore renewable energy	**17**	**Share of energy from renewable sources**	% gross final energy consumptio n	Eurostat	Member States	2.4	Range: 4% - 25 % Average: 13%	2011
	18	**Off-shore wind energy production capacities**	MW	EWEA	Atlantic area as a whole	2.4	2 975 MW	2012

Expected result	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value	Ref. year
	19	**Supply, transformation, consumption – renewables (hydro, wind, photovoltaic)**	Gigawatt hour	Eurostat	Atlantic area as a whole	2.4	534 GWh	2011
Better understanding of mining for minerals and development if mining technologies Foundations for a sustainable, high-value-added marine biotechnology industry	**20**	**Non renewable resource extraction**	m3/toeq	JRC, OSPAR	Atlantic area as a whole	2.2	7Mt	2012
	21	**Biotechnology patent applications to the EPO (by priority year and NUTS 3 region)**	Number of patent applications	Eurostat	NUTS 2	2.2	Range across Atlantic regions : 0,2 - 21,04 Average: 5,31	2009
Improved market position of EU-sourced fisheries and aquaculture products	**22**	**Aquaculture production**	tonnes live weight	Eurostat	Member States	1.3	755438 tonnes life weight	2009
	23	**Protection of marine and coastal environment**	Target met/not met	ICES, OSPAR	Atlantic area as a whole	2.2 / 2.3	Not met	2012
Global climate change mitigation and GES fostering	**24**	**Marine protected sites**	superficie km² / nb of sites	EEA	Atlantic area as a whole	2.3	044,4 m2 21 398	2012
	25	**Compliance with the Marine Strategy Framework Directive**	True / False	DG-ENV	Atlantic area as a whole	2.3	True	2012
Reduced environmental impact of fisheries and aquaculture	**26**	**Fisheries - Variety of species**	tonnes live weight	Eurostat	Member States	1.3	1 866 753 tonnes product weight Share of 5 main fishery species: 34%	2009
Diversification of maritime and coastal tourism products and development of niche markets/ Reduced seasonality and improved prospects for SMEs	**15**	**Number of cruise passengers**	thousands of passengers	*Eurostat*	*Member States*	3.1 / 4.2	1,3 million	

Expected result	No. of indi-cator	Name of the indicator	Unit	*Potential source (provider)*	*Geo-graphic coverage*	Related AAP priority / specific objective	Baseline value	Ref. year
Adaptation and diversification of economic activities by promoting the tourism potential of the Atlantic area	**27**	**Nights spent at tourist accommodation establishments in coastal regions**	number of nights	Eurostat	NUTS 2	4.2 / 1.3	203 971 592 ?	2011
	28	**Increase in expected number of visits to supported sites of cultural and natural heritage and attractions**	visits/year	DG REGIO	NUTS 2, NUTS 3	4.2 / 1.3	Data not yet collected, no baseline value available	N/A
Better safety and security of seafarers, coastal populations, property and ecosystems	**29**	**Number of vessels involved in accidents across the Atlantic Area**	number	EMSA - Maritime Accident Review	Seas along the whole Atlantic area	2.1	Sinking : 32 Collisions/Contacts : 288 Groundings : 143 Fires/explorations : 83 Others : 98	2010
	30	**Number of non-indigenous species**	Number	OSPAR QSR	The Atlantic area as a whole	2.1	27	2010
	31	**Flood directive: compliance with the article 6 (risk maps) and later 7 (FRMP)**	True / False	DG-ENV	The Atlantic area as a whole	2.1	True. Targets met for all phases to be implemented to date (3 out of 5 phases)	2013
	32	**Oil response vessels**	No. of ships, capacity (m3)	European Atlas of the Seas, EMSA	The Atlantic area as a whole	2.1	6	2013
	33	**Oil spills**	tonnes	International tanker owners pollution federation ltm (or EMSA, Atlas of the European Sea, Lloyd's register, EEA)	The Atlantic area as a whole	2.1	0, no major spill detected	2013

1.4 Output indicators

As for the 38 operational objectives of the Atlantic Action Plan, a list of output indicators was provided in the Indicators report. They cover in general the number of projects, volume of financing, qualitative information on the status of implementation or assessment of cooperation. The baseline information has not been established in this report, as the data is not readily available and very scattered to assess the financing period 2006-2013 and would require specific research beyond the scope of the present assignment.

To give a general idea of the projects and funding allocated to projects responding to the priorities and objectives of the Atlantic action plan in the Atlantic area, the tables on the following pages (Figure 2) provide an analysis of funding allocated in the Atlantic area through different financing instruments available in the 2007-2013 financing period. Each fund has specific characteristics, which also impacts the availability of data. In this sense, the table includes notes (disclaimers) describing any potential limitations.

Finally, the annex of this report provides an overview of EU co-funded projects in line with the operational objectives of the Atlantic Action Plan is provided.

Figure 2 – Overview of funding and projects financed in the Atlantic area in the financing period 2007-2013 through European funds

Fund	Sector	Priority group	Total Budget for EU	Funds allocated per country	Funding allocated to the Member States of the Atlantic area	Projects within the Atlantic Action Plan
European Maritime and Fisheries Fund (EMFF)	Fishery and related activities	1	EUR 5,5 bil 2014-2020	Funds not allocated yet	N/A	In the next programming period, to maximize the effectiveness of European Structural and Investment (ESI) funds (which include the financial instruments for cohesion policy, rural development and fisheries), the Commission has proposed the common provisions regulation (COM (2011) 615). Specific allocation of funds for different project areas in Article 15, (5)
European Fisheries Fund (EFF)	Fishery and related activities	1	€4.3 billion for 2007-2013	*Per country : Used / Total* available (in mil €) France: 34,25 /181,8 Spain: 945,69 / 186,20 Portugal: 223,94/ 22,54 Great Britain:43,15/94,68 Ireland: 0 / 42,27	Only scattered information is available through national websites.	N/A
EU's financial instrument supporting environmental and nature conservation project (LIFE+)	Environmental Protection	2	€2,1 billion for 2007-20013	Not applicable.	France: 7,8 mil € Spain: 10 mil € Portugal: 12 mil € United Kingdom: 10 mil € Ireland: 2,1 mil € Note: data for 2008-2013	LIFE is the EU's financial instrument supporting environmental and nature conservation projects throughout the EU. Since 1992, LIFE has co-financed some 3954 projects, contributing approximately €3.1 billion to the protection of the environment. LIFE+ ran from 2007-2013 and had a budget of €2.143 billion. It consisted of three components: LIFE+ Nature and Biodiversity, LIFE+ Environment Policy and Governance, and LIFE+ Information and Communication.
Trans-European transport network (TET-N)	Transport infrastructure	2	€8 billion 2007-2013 €26 billion 2014-2020	Not applicable.	*Per country, EU/OWN (mil €)* France: 46,5/153,9 Spain: 355,6/1263,4 Portugal: 315,7/1579,2 United Kingdom: 103,2/431,4 Ireland: 12,6/12,6	Atlantic corridor, rail, €7.8 billion, for the French part is funded, PPP, further funding detail in (2) North-Sea-Mediterranean corridor (many links in UK and Ireland), some HSL in place, no budget indications (13) Specification of projects, no additional budget info. (14) Budget overview, previous distribution of total funding (national and EU) (15): Details of TEN-T projects on a country-by country base, no budgets

Fund	Sector	Priority group	Total Budget for EU	Funds allocated per country	Funding allocated to the Member States of the Atlantic area	Projects within the Atlantic Action Plan
Connecting Europe Facility	Transport infrastructure	2	The budget for the TEN-T in the Connecting Europe Facility (CEF) of €26.3 billion, including €11.3 billion ring-fenced for the Member States eligible to the Cohesion Fund			Projects included in TEN-T program, but funding comes (partially) from the CEF. Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility (12) (13) Specification of projects, no additional budget info.
European Territorial Co-operation (ETC)	Transport infrastructure	2, 3	The programme is co-financed by the European Regional Development Fund (ERDF) with a budget of €359 million for the 2014-2020 period. (17) The European Territorial Co-operation objective is financed by the (ERDF) The budget of €8.7 billion for this objective accounts for 2.5% of the total 2007-13 allocation for cohesion policy (18)	Funds are not allocated to countries, but to international co-operation	*Operational Program, EU/National funds, mil €* Two Seas, 167/128 Northern Periphery 35/59 Atlantic Area, 104/55 Madeira, Azores, Canaries, 55/10 Ireland-Wales, 53/18 France /channel) - England 173/154 Northern Ireland, the Border Region of Ireland and Western Scotland, 192/64 TOTAL: 779/488	Discussions on the multi-annual financial framework (in other words, the seven-year budget for the EU from 2014-2020) have been well publicized, with an agreement made between the European Council (Member States representatives) and the European Commission in February 2013. This agreement budgets EUR 8.9 billion for European Territorial Cooperation as a whole.
Framework Programme 7 (FP7)	Research / Innovation	1	A total of €50 billion was available for the 2007-2013 period.	Funds are not allocated to countries, but to international co-operation	48 projects having received funding amounting to 203 983 157 €	The projects financed under the FP7 involve partners from many different countries, sometimes worldwide. It is difficult to separate the budget of a project in different areas. The projects selected involve countries from the Atlantic area and are linked to the priorities of the action plan.

Fund	Sector	Priority group	Total Budget for EU	Funds allocated per country	Funding allocated to the Member States of the Atlantic area	Projects within the Atlantic Action Plan
Competitiveness and Innovation Framework Programme (CIP)	Entrepreneurship	1	The total budget was of 3.62 billion euro for 2007-2013. At the end of 2013 agreements were signed with 46 financial institutions in 21 countries across Europe and reached 275,113 SMEs. The loan amount that CIP SMEG has generated for SMEs was in the order of EUR 15,015m.	France : 5 agreements with financial institutions Spain : 2 agreements with financial institutions Ireland : 1 agreement with a financial institution UK : 2 agreements with financial institutions Portugal : 1 agreement with a financial institution	Data is only available on a macro-level, indicating the amount received per financial institution. No detail is available regarding the number or types of projects financed. Therefore, it is impossible to evaluate the share of projects by this tool in line with the Atlantic Action Plan financed and in the Atlantic area.	Data is only available on a macro-level, indicating the amount received per financial institution. No detail is available regarding the number or types of projects financed. Therefore, it is impossible to evaluate the share of projects by this tool in line with the Atlantic Action Plan financed and in the Atlantic area.
European Regional Development Fund (ERDF), European Social Fund (ESF)	Regional development	1,2,3,4	A total of €347 billion were allocated in the 2007-2013 period, with €201bn for the European Regional Development Fund, €76bn for the European Social Fund, and €70bn for the Cohesion Fund.	Spain: 34,657,733,981 € (10%) Portugal: 21,411,560,512 € (6%) France: 13,449,221,051 € (4%) United Kingdom: 9,890,937,463 € (3%) Ireland: 750,724,742 € (0,2%)	The Atlantic area Operational programme, financed by the ERDR-ESF, had almost identical goals to the Atlantic action plan in the financing period 2007-2013. During this period, a total of 63 projects were financed with a total expenditure of 145 milion Euros. The ERDF-ESF accounting for 94,3 millions of euros (65%). Note: *Information for other INTERREG programmes and projects is available only on a scattered basis and therefore impossible to evaluated precisely.*	France: 35,335,127.05 € (29%) Spain: 35,335,127.05 € (24%) Ireland: 17,272,862.06 € (12%) UK: 23,187,723.74 € (16%) Portugal: 27,298,911.70 € (19%) Note: *Information for other INTERREG programmes and projects is available only on a scattered basis and therefore impossible to evaluated precisely.*
European Investment Bank (EIB)	Infrastructure / Entrepreneurship / innovation / ressource efficiency	1,2,3,4	From 2009 to 2014 the EIB granted 2 998 loans in the European Union for a total amount of 308 626 207 901,00€.	Spain : 520 loans for a total of 49 141 764 738,23 € France : 229 loans for a total of 28 869 265 507,97 € Ireland : 25 loans for a total of 3 085 937 698,67 € Portugal : 146 loans for a total of 11 098 985 853,54 € UK : 206 loans for a total of 25 884 532 951,95 €	Spain : 86 loans (9 716 961 272 €) France : 12 loans (1 614 000 000 €) Ireland : 25 loans (3 085 937 698,67 €) Portugal : 146 loans (11 098 985 853,54 €) UK : 42 loans (5 368 147 105 €)	Spain : 53 loans for a total of 5 379 820 117,65€ France : 4 loans for a total of 450 000 000€ Ireland : 9 loans for a total of 1 110 000 000€ Portugal : 23 loans for a total of 2 160 379 115,08€ UK : 30 loans for a total of 3 874 255 062,75€ Total for the area 10 054 057 032,26 €

2 Methodology applied for the elaboration of the baseline

The present report presents the baseline values of the indicators defined in the monitoring and evaluation framework synthesized in the Indicators report for the Atlantic Action Plan. The document follows the structure of the Atlantic Action Plan and is organized in sections by priority and subsections by specific objective.

Each section starts with an introduction, situating the Atlantic area in a global and European context and presenting an outline on key policy elements. Indicators' baseline values are then provided in a summary table, which provides the value for each indicator in the last year for which comparable data is available for most of the geographic sample (reference year). For quantitative indicators which are country or region specific, a graph or table is provided to enable an easy visual comparison of the data. Where data was available, the graph shows both the baseline value and a percentage rate indicative of the data's evolution between the baseline year and the first of year of the financing year (or oldest year available).

Finally, examples of successful projects in the past programming period in line with the operational objectives of the Atlantic Action Plan are listed in the annex to this document, with a focus on projects implemented in 2009 or later. These projects were searched through the websites of the European funds and managing authorities and present significant projects, and are often referred to as success stories by either European or regional authorities.

3 Priority 1 – Promote entrepreneurship and innovation

Priority 1 aims at the promotion of entrepreneurship and innovation, through increased cooperation between businesses and academia, improving competitiveness with a strong focus on the Atlantic area's the labour force, its recruitment and training and, by seeking to boost and facilitate the evolution of the two back-bones of the maritime economy – aquaculture and fishery.

More precisely, the priority is divided into three specific objectives: sharing knowledge between higher education organizations, companies and research centres (knowledge sharing, networking, cooperation), enhancement of competitiveness and innovation capacities in the maritime economy (skills development and innovation) as well as the fostering adaptation and diversification of economic activities and by promoting the potential of the Atlantic area (economic diversification).

Impact indicators relating to Priority 1

Two impact indicators relating to Priority 1 were defined:

- **Gross domestic product per inhabitant**
- **Enterprise demographics**

Number of indicator	**Name of the indicator** *(in yellow : indicators chosen for monitoring the AAP)*	**Unit**	***Potential source (provider)***	**Related AAP priority / specific objective**	**Baseline value**	**Reference year**
1	**GDP in Atlantic regions**	€ / inhabitant	*Eurostat*	*All priorities Focus: Priority 1*	Range across Atlantic regions: 13 000 - 39 990 Average: 25 586	2011
2	**Enterprise birthrate**	Number of enterprises	*Eurostat*		923 255 in the Member States of the Atlantic area	2011

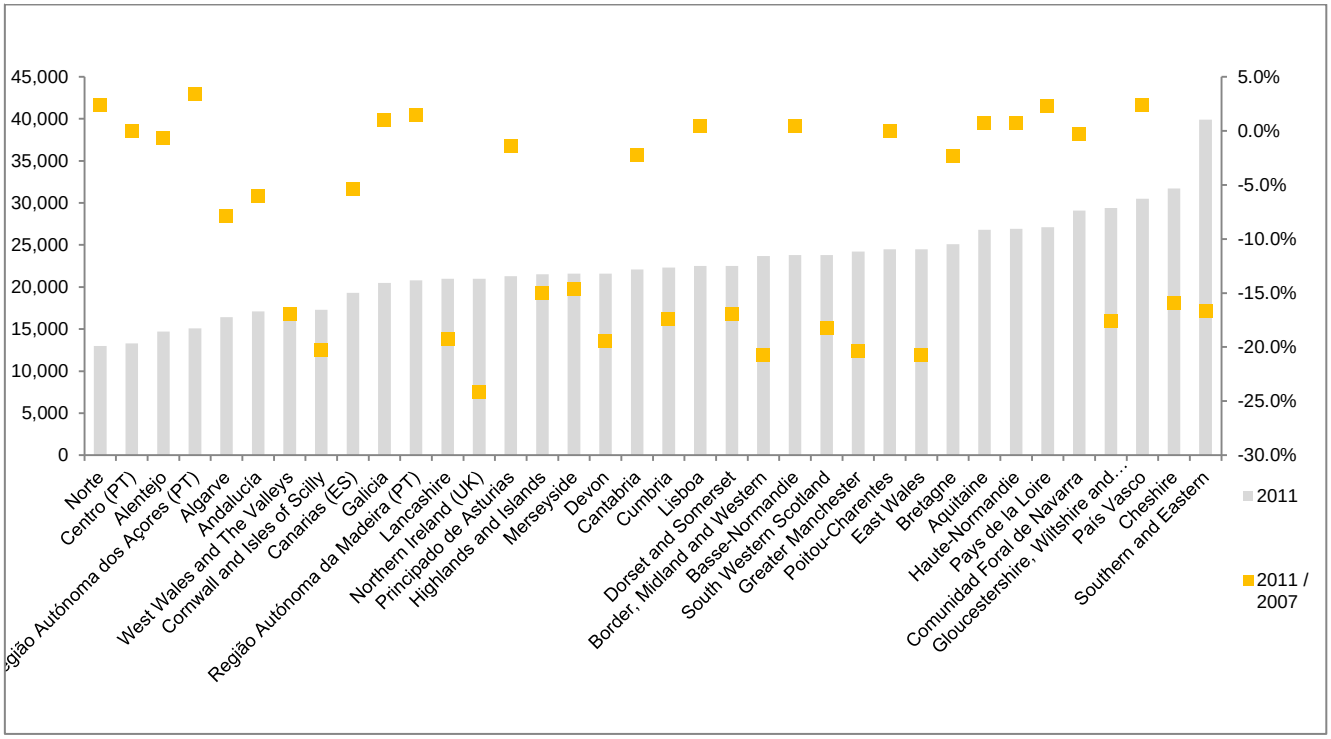
Gross domestic product per inhabitant

The gross domestic product is one of the most basic indicators to be analyzed, as it gives an aggregated overview of the economic performance of the Atlantic area, as well as a, to a certain extent, the socio-economic condition of its inhabitants.

In the reference year 2011, only 8 of the 36 Atlantic regions are, in terms of GDP above the EU-27 level. The Irish Southern and Eastern region had the highest level of GDP per inhabitant (39 990 € / inh.), followed by Cheshire (31 700 € / inh.) and Pais Vasco (30 500 € / inh.). On the other end, three regions in Portugal were among the poorest Atlantic regions with values at about a half of the EU-27 average: Norte (13 000 € / inhabitant), Centro (13 300 € / inh.) and Alentejo (14 700 € / inh.).

An analysis of the evolution of GDP / inhabitant over the 2007-2011 period reveals however that the Atlantic area was hit harder by the financial and economic crisis of the last years than the EU-27 altogether. Before the crisis in 2007, the average GDP / inhabitant of the 36 Atlantic regions (25 031 €) was practically at the EU-27 level (25 100 €). In 2011, the 36 Atlantic regions overall recorded an average value of GDP / inhabitant of 22 586 €, a value 10% below the EU-27 average of 25 200 €. Northern Ireland (-24%), East Wales (-21%) and Border, Middland and Western (-20%) were the three regions which hit the most by the crisis. On the contrary, the Açores (+3,4%), Norte (+2,4%) and Pays de la Loire (+2,3%) grew the fastest.

Figure 3 - GDP per inhabitant by NUTS-2 region



Enterprise birthrate

This indicator measures the enterprise creation during which no other enterprises were involved (excluding merger and break-up). When compared to the enterprise deathrate, this indicator allows to measure the net creation (or destruction) of enterprises. This indicator is updated annually and is based on business registers. Data is only available at NUTS 0 level, therefore the analysis covers only the level of member states of the Atlantic area.

Figure 5 - Business Churn (enterprise birth - death)

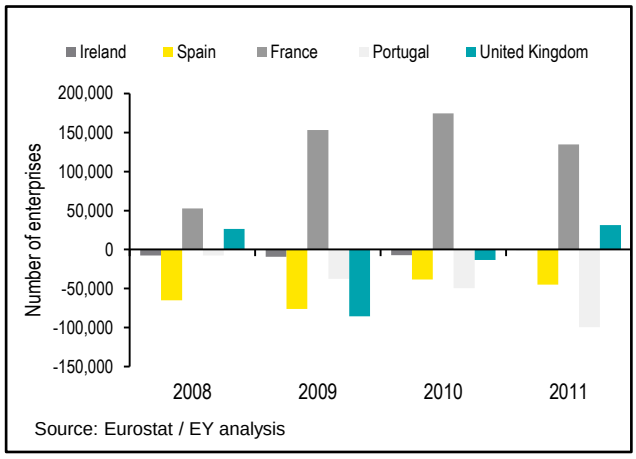
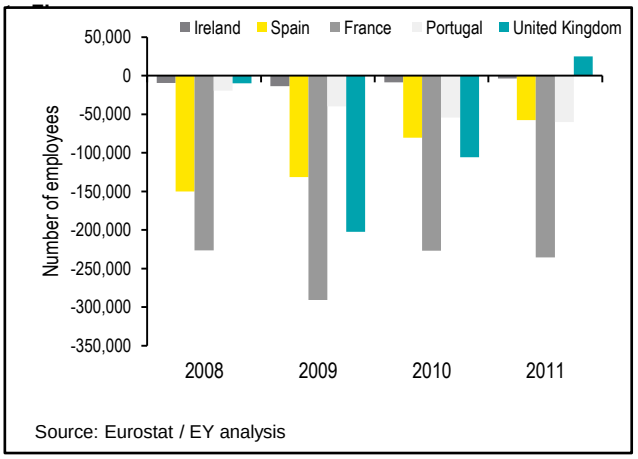


Figure 4 - Creation / destruction of employment Move close



In 2008 and 2009 the Member States of the Atlantic area registered more enterprise death than birth resulting in an overall destruction of enterprises.

The high number of enterprise deaths illustrates the impact of the economic crisis on businesses in the Atlantic area. When looking at the difference between the number of enterprise births and deaths, France is the only country where the creation of enterprises exceeds the destruction of enterprises over the period 2008-2011. Spain and Portugal on the other hand had an important destruction of enterprises over the time period. However, the number of employees in the enterprises created and in the enterprises destroyed tempers somewhat these observations. The statistics show that even though France is the only country with a net creation of enterprises over the all period it is also the country with the highest destruction of employment through the birth and death of enterprises.

3.1 Sharing knowledge between higher education organisations, companies and research centres

A general challenge for innovation and growth is to establish close cooperation between research institutions, higher education institutions and business. The issue is not only to establish strong links among actors on the regional level, but also among actors across different member states. The creation of cross-border clusters or improving international cooperation among clusters can, in this sense, contribute to the realization of new synergies.

In recent years, successful cooperation between academia, private research and business were those that engaged in closer partnerships. As pointed out in 2006 in a public consultation on knowledge transfer among industry and universities organized by the European Commission[3], the efficient knowledge transfer between European research institutions and businesses is hindered by a range of factors, including cultural differences between the business and science communities, lack of incentives, legal barriers, and fragmented markets for knowledge and technology.

Clusterization efforts over the past decades have contributed to increasing synergies among actors on a regional level and within industries or sectors. Cooperation among international institutions is still to be developed in order to realize its full potential.

Specific objective 1.1 is linked to two operational objectives – one on networking and cooperative research between institutions in research and education and business; and another on the actual knowledge transfers among these actors, including clusters and technology platforms. With respect to these priorities, following indicators have been identified:

- **Number of enterprises cooperating with research institutions**
- **Number of research institutions participating in cross-border, transnational or interregional research projects**

The two indicators proposed are core indicators of the ERDF programme for the 2014-2020 period and will be tracked in the upcoming financing period by the DG REGIO. To establish an indicative baseline, we will thus use as proxies three similar indicators from the Community innovation survey[4] of 2010:

- **Enterprises co-operating with consultants, commercial labs, or private R&D institutes**
- **Enterprises co-operating with universities or other higher education institutions**
- **Enterprises engaged in any type of innovation co-operation with a partner in EU countries, EFTA or EU candidates countries (except a national partner)**

[3] European Commission – DG Research (2006): *Public consultation on transnational research cooperation and knowledge transfer between public research organisations and industry.* Link: http://ec.europa.eu/invest-in-research/pdf/download_en/consult_report.pdf.

[4] The Community innovation survey is conducted every two years. Surveys are carried out with two years' frequency by EU member states and number of ESS member countries. Compiling CIS data is voluntary to the countries, which means that in different surveys years different countries are involved. The CIS provides statistics broken down by countries, type of innovators, economic activities and size classes. (source: Eurostat).

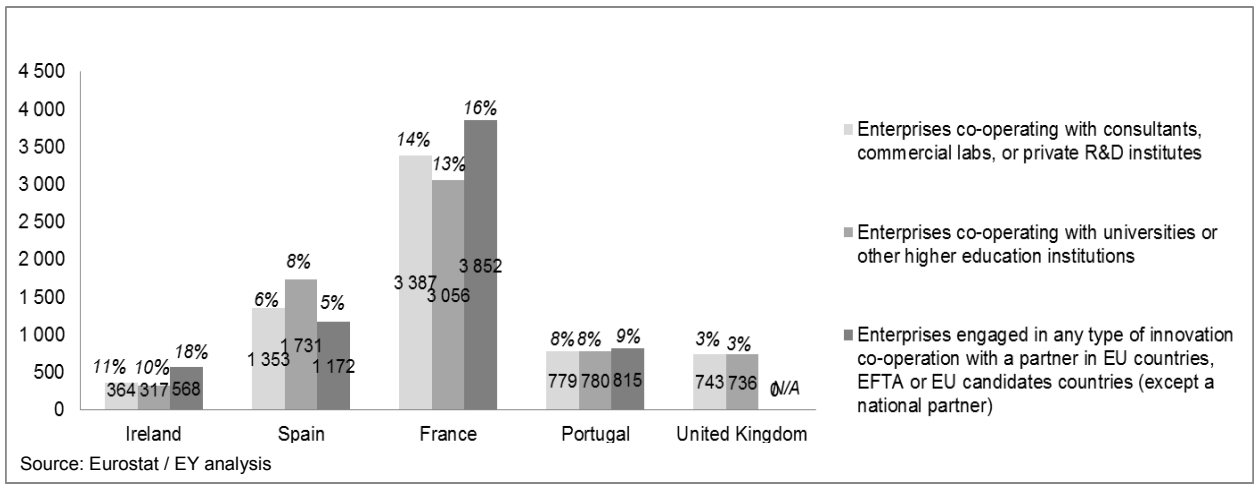
Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
7 (rep. A)	**Enterprises co-operating with universities or other higher education institutions**	Number of enterprises	Eurostat	1.1	Total: 6620 Range: 317 - 3056	2010
7 (rep. B)	**Enterprises co-operating with consultants, commercial labs, or private R&D institutes**	Number of enterprises	Eurostat	1.1	Total: 6626 Range: 364 - 3387	2010
8 (rep.)	**Enterprises engaged in any type of innovation co-operation with a partner in EU countries, EFTA or EU candidates countries (except a national partner)**	Number of enterprises	Eurostat	1.1	Total: 6407 Range: 568 - 3852	2010

As mentioned, the proxy indicators are not exactly those which were suggested in the baseline report to be followed. Essentially, this is because the suggested ERDF indicators offer a more precise view both thematically and geographically, as they are defined on a NUTS-2 level, while the CIS statistics are national.

Enterprises co-operating with universities or other higher education institutions; Enterprises co-operating with consultants, commercial labs, or private R&D institutes; Enterprises engaged in any type of innovation co-operation with a partner in EU countries, EFTA or EU candidates countries (except a national partner)

In relative terms, the member states of the Atlantic area account for 24% of EU companies cooperating with consultants, commercial labs or private R&D institutes (EU total: 27 473 enterprises) and 26% of EU companies with universities or other higher education institutions (EU total: 30 774 enterprises).[5]

Figure 6 - Indicators on the cooperation between businesses, higher education institutions, research and development centers and on international cooperation in innovation



Source: Eurostat / EY analysis

[5] Values from Eurostat table, *Types of co-operation partner for product and process innovation,* [inn_cis7_coop]

France and Spain are the largest contributors, in terms of the number of companies in all three categories, while the UK, Portugal and Ireland are lagging behind. It is also useful to include a relative view, ie. the share of companies which these volumes actually represent in their national context.

To give a general idea, the EU-27 value for the indicator "Enterprises co-operating with universities or other higher education institutions" was 10,8% in 2010, while for "Enterprises co-operating with consultants, commercial labs, or private R&D institutes", the EU-27 value was 9,65%[6]. No EU-value was collected for the last indicator on cross-border cooperation. Using the relative comparison, France comes again significantly above the average, followed by Ireland with results slightly above the EU average (with the exception of international cooperation, for which its value of 18% is double that of the EU average) and Portugal achieving values not far below the EU value. Finally, companies in the UK are less involved in cooperating with private labs or R&D institutes and public bodies of higher education and universities.

Regarding clusters and their cooperation across borders, it is worth pointing at one initiative: the European Network of Maritime Clusters[7]. It was founded in 2005 and of the five Atlantic MS, only France, Spain and the UK participate. Experiences are exchanged to some extent during meetings. It seems that activities across member states vary significantly, however, this assumption is only made based on the level of activity on the webpage.

The French maritime cluster, *Cluster Maritime Français*, has about 240 members, including ship owners, ports, manufacturers, research institutes, shipping brokers and fisheries operators. Its main goal is to promote the maritime industry and to identify synergies between actors, to improve data and communication on maritime activities and to lobby for the French maritime industry.

The British industry association *Maritime UK* represents shipping, port and marine businesses by uniting seven British trade associations working across the maritime sector in the UK. In Spain, the Galician *Campus do Mar* is a joint project by four universities, the Spanish Council of Scientific Research and the Spanish Institute of Oceanography. Its goal is to generate quality research and to provide the marine industry with knowledge and tools to compete on a global scale by training professionals and researchers in the field of Marine Science.

Portugal has a similar national activity called Oceano XXI[8], and in Ireland there is an initiative called IMERC (Irish Maritime and Energy Resource Cluster)[9]. The purpose of the cluster is similar to the other initiatives, and they work to orchestrate growth in the maritime sector through attracting businesses and skilled employees.

3.2 Enhancement of competitiveness and innovation capacities in the maritime economy of the Atlantic area

Competitiveness and innovation are measured in this specific objective through result indicators on innovation and the number of employees working in high-tech or knowledge intensive sectors.

Europe is a world-leader in research and innovation on marine biotechnology and marine mineral resources, including marine hydrocarbons. In all of these domains, European institutions lead over their American and Asian counterparts in terms of scientific output. However, non-European institutions are dominant in terms of number of patents and inventions, in particular from Japan and China in the field of marine biotechnology, and the US in marine minerals, suggesting greater involvement in research and uptake of its results by industry in these countries[10]. Reasons for this are multiple, but may include bottlenecks in the European patent system.

On the second topic, Europe's "blue economy" employs currently 5,4 million people. Expectations are that this number could rise to almost 7 million workers by 2020. To make the best out of this potential, several

[6] Values from Eurostat table, *Types of co-operation partner for product and process innovation,* [inn_cis7_coop]
[7] http://www.european-network-of-maritime-clusters.eu/

[8] http://www.oceano21.org/default.asp?LN=EN

[9] http://www.imerc.ie/
[10] DG MARE, 2012: Blue Growth, sub-function 2.4: Blue Biotechnology

factors come into play, the most important one being a sufficiently large and well-trained workforce across a wide range of maritime economic sectors.

Maritime regions are particularly aware of this need, given a lack of interest on the part of young people in maritime careers, from shipbuilding and offshore industry, maritime transport to maritime research and tourism.[11] This then translates into an increasing skilled labour shortages, as well as issues in recruitment and retention.

This point was highlighted in a 2008 report[12] on the role of Maritime Clusters, which argued the difficulty in attracting potential employees and young people to the maritime sectors, in particular to the offshore professions is mainly due to the increasing importance of a work-life balance in modern society and the ageing of officers. Furthermore, due to changing demographics, the maritime industry has to compete with other industries for an ever-decreasing number of young school leavers. Moreover, the report[13] argues that attracting people to offshore activities is not only important for the shipping and offshore sectors, but also for the onshore maritime sectors. This is because offshore staff can be of great use at a later stage of their career because of their valuable experiences and competences (e.g. port and service related).

The education and training of seafarers is an important issue for the EU, in order to maintain and develop the level of knowledge and skills in the maritime sector in the EU as well as in the interest of maritime safety.

Programmes need to be developed to strengthen the attractiveness of maritime careers and make training programmes more vocational. A good example of this is the Vasco de Gama pilot project, presented below.

In 2010, the Commission established a Task Force on Maritime Employment and Competitiveness to develop ideas on ways to strengthen the attractiveness of the seafaring profession while keeping the EU shipping industry competitive. Topics covered included the labour market, the attractiveness of the profession, the maritime cluster's needs, training and qualifications and working and living conditions. Key objectives were to identify obstacles both to entry to the maritime profession by European youth and their recruitment by European employers and to subsequently develop recommendations.

Several funding tools are available at an EU level in the field of education and training to support the objectives of the Atlantic action plan. However to date unfortunately there have been few maritime applications and projects making use of these instruments. The Consultation on Blue Growth found that “two-thirds of the respondents are not aware of any specific initiatives and partnerships underway in Member States and regions to address [skills, qualifications, and overall education and employment]”.[14]

The EU has developed a number of instruments on vocational education and training that might prove useful in the maritime area, including: The European qualification framework (EQF), European credit system for vocational education and training (ECVET), Europass, European Quality Assurance Reference Framework for VET (EQAVET).

The EU lifelong learning programme had a budget of nearly EUR 7 billion for 2007-13. It funds various actions including exchanges, study visits and networking activities. There are four sub-programmes which fund projects at different sectors of education and training: "Comenius" for schools, "Erasmus" for higher education, "Grundtvig" for adult education and "Leonardo da Vinci” for VET Structural funds.

The Youth on the Move initiative, launched in 2009 by José Manuel Barroso, President of the European Commission, offers all European young people the possibility of studying or training in another European Member State. One of its key aspects is to support development of transnational learning and labour mobility for young people.

[11] CRPM (2011), Vasco da Gama: Youth Mobility Instrument for Tomorrow’s European Maritime Policy”, http://www.crpm.org/pub/docs/196_en-vasco_da_gama_outil_de_mobilit_des_jeunes.pdf
[12] Policy Research Corporation, “The role of Maritime Clusters to enhance the strength and development of European maritime sectors”, a reported commissioned by DG MARE in 2008
[13] Policy Research Corporation, “The role of Maritime Clusters to enhance the strength and development of European maritime sectors”, a reported commissioned by DG MARE in 2008
[14] Blue Growth: sustainable growth from the oceans, seas and coasts: Summary Report of the Online Public Consultation Results, http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/blue_growth/blue-growth-consultation-report_en.pdf

Baseline situation

The following indicators have been identified to be part of an evaluation of the Atlantic Action Plan on specific objective 2.1:

- **Total intramural R&D expenditure (GERD) by NUTS 2 regions**
- **Employment in technology and knowledge-intensive sectors**
- **Patent applications to the EPO by priority year by NUTS 2 regions**

The following assessment of the baseline situation for the Atlantic region regarding enhancement of competitiveness and innovation capacities in the maritime economy of the Atlantic area were defined:

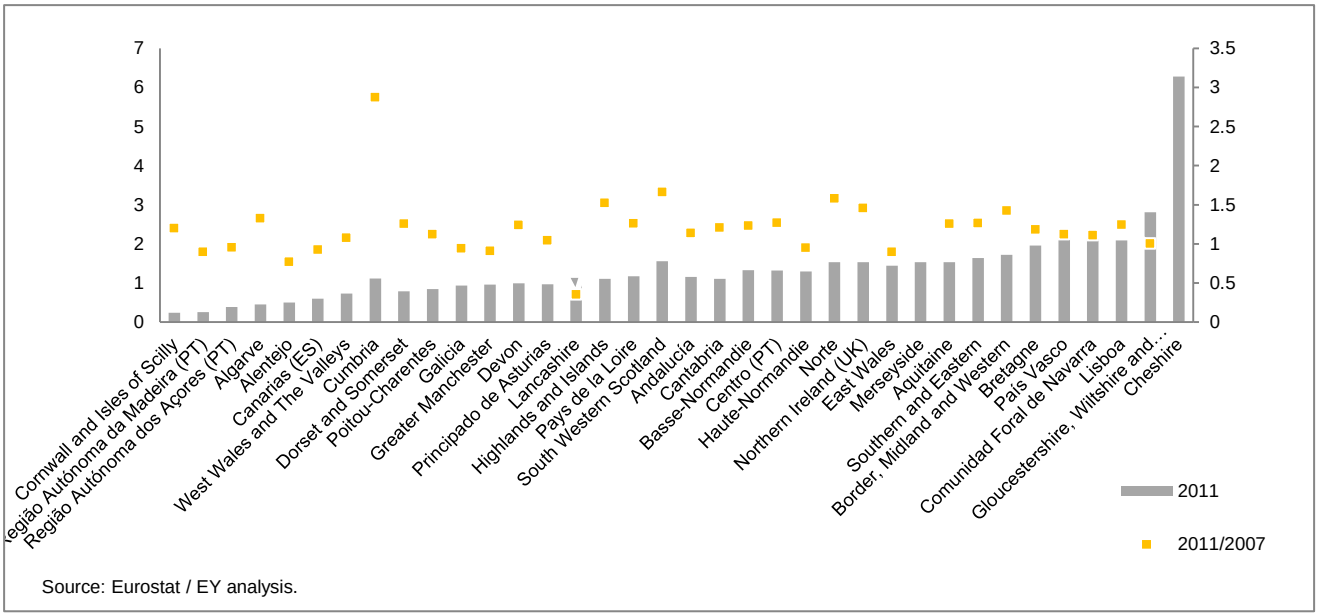
Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
9	**Total intramural R&D expenditure (GERD)**	% of GDP	Eurostat	1.1	Range across Atlantic regions : 0,24 - 6,28 Average: 1,37	2010
10	**Patent applications to the EPO by priority year**	Number of applications per million of inhabitants	Eurostat	1.2	Range across Atlantic regions : 0,958 - 78,562 Average: 22,4	2010
11	**Employment in technology and knowledge-intensive sectors**	% of total employment	*Eurostat*	1.2	27 689	2012

Total intramural R&D expenditure (GERD)

Both the Lisbon strategy and the Europe 2020 strategy set as a target for member states to achieve that the sum of private and public spending on research and development (GERD) account for 3% of GDP. With the exception of Cheshire (a Welsh region having a larger number of R&D intensive sectors and knowledge based companies[15]), the Atlantic regions had not achieved this target – the average value amounting to only 1,37% in 2011.

[15] North West Regional Development Agency, *Northwest Competitiveness Operational Programme, 2007-2013*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/120674/ERDF_North_West_Operational_Programme.pdf, p24.

Figure 7 - Gross expenditure for R&D (% of GDP)



Source: Eurostat / EY analysis.

In terms of evolution, spending on R&D relative to GDP increased over the 2007-2011 period in Europe. The Atlantic area was no exception to this trend, with all but 10 regions experiencing growth as shown in the graph below. The seemingly favourable evolution despite the economic crisis and austerity measures have to be mitigated, however. R&D expenditure rose in most regions between 2007-2009. The year 2009 was the breaking point of the economic crisis in Europe. In the following years, austerity measures were adopted across Europe including countries of the Atlantic area. Ireland, Portugal and Spain experienced some of the most severe budget cuts. This ultimately translated into a low of public investment on R&D, which is a part of the reason why the GERD decreased in the following period 2009-2011 in 22 out of the 36 regions of the area.

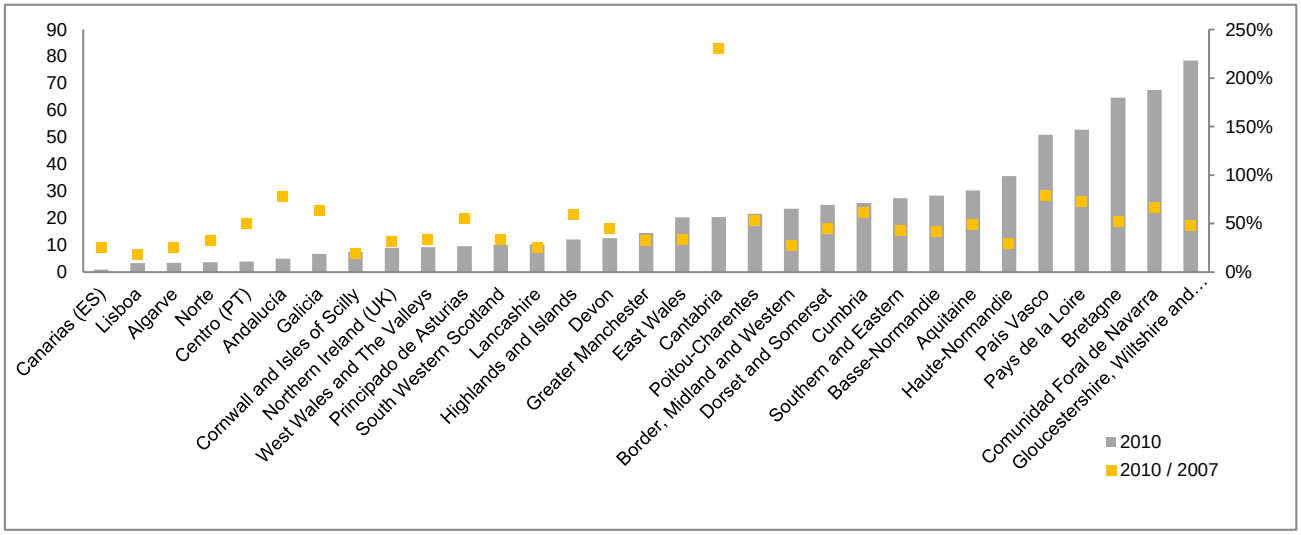
Patent applications to the EPO by priority year

Regarding patents, the ability of Atlantic regions to convert R&D into patented products is with a 2010 average of 22,4 patent applications to the European Patent Office per million inhabitants less strong than the average of all EU regions (average value of 54,7 patents / million inhabitants). The most recent data available is for 2010, but a comparison with 2007 values (beginning of the last financing period) indicates that in most regions of the Atlantic area, the number of patent applications actually decreased over the 3 years analyzed.

Increased scrutiny is probably one of the major reasons why the relative number of patent applications decreased. As a matter of fact, the European Patent Office (EPO) announced in 2010 that its evaluation of patent evaluation would become stricter.[16]. Cantabria seems to be an exception at first sight, but a detailed examination reveals that this is due to a significant low of applications in 2007 with respect to the years before (2006) and after (2009), which are both close to the value of 2010.

[16] Euractiv, *European patent applications fall*, http://www.euractiv.com/innovation-enterprise/european-patent-applications-fal-news-486307. Published 22nd April 2011.

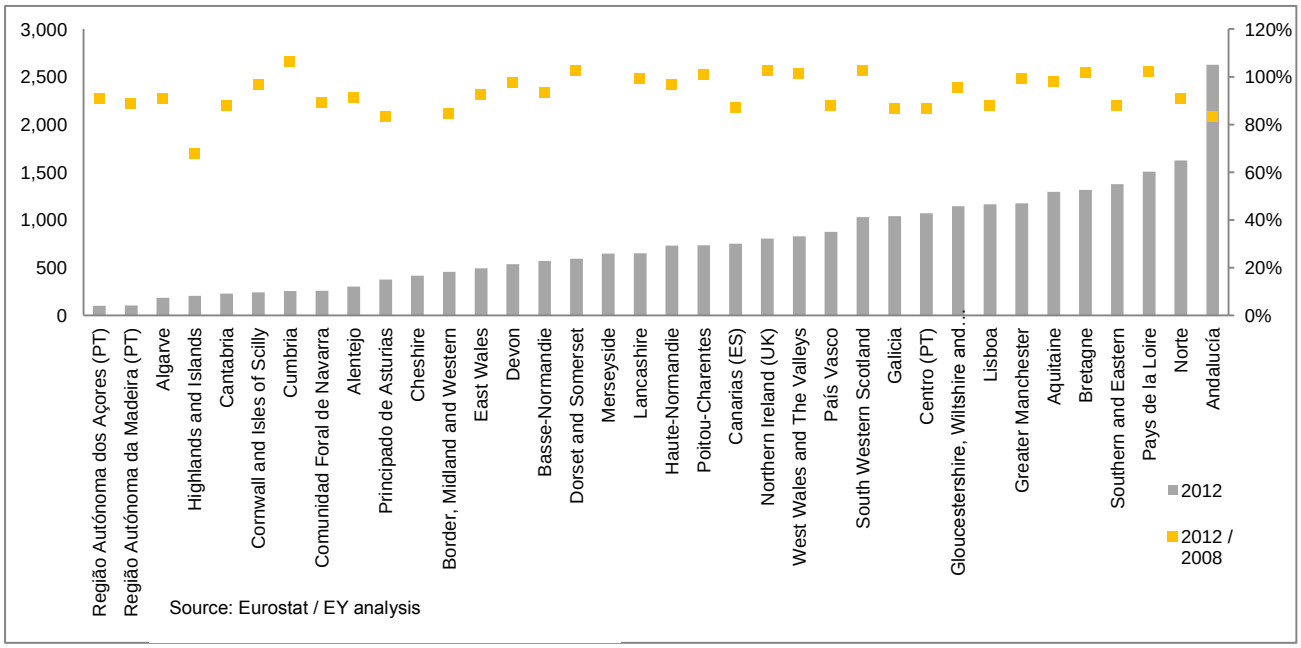
Figure 8 - Patent applications to the EPO by priority year by NUTS 2 regions



Employment in technology and knowledge-intensive sectors

Finally, 27 689 workers in technology were employed in technology and knowledge intense sectors in the Atlantic area as a whole. The number was highest in Andalusia (2,6 million), the Açores and Madeira being on the other end of the scale (101 and 105 thousand employees respectively). Compared to 2008 when this statistic was first undertaken, the number of employees in this category went down on average by 7%. Only 8 regions (3 in France and 5 in the UK) recorded an increase in technology and knowledge intensive employment increased.

Figure 9 - Employment in technology and knowledge-intensive sectors by NUTS 2 regions and sex (in thousands)



3.3 Fostering adaptation and diversification of economic activities by promoting the potential of the Atlantic area

Specific objective 1.3 and the four operational objectives linked to it address a vast spectrum of topics across the fisheries and aquaculture value chain: research on the environmentally safe techniques and technologies; sharing information among fishers to improve their understanding of the impact of their managerial decisions on the sea ecosystem; research on growth, productivity, competitiveness and sustainability of aquaculture; and the improvement of the market position of the EU-sourced fisheries and aquaculture.

Therefore, it is important to first situate the EU's fisheries and aquaculture in the global context.Worldwide, fish provides about 16 per cent of the total animal protein consumed. The FAO estimates that about half of this fish protein is provided through aquaculture and that the share of aquaculture production will rise to about 65 per cent in 2030[17].

In 2009, the EU produced about 5 million tons of fish, of which 3.5 million tons were fished in the north-east Atlantic, mostly in the EU EEZ. The total value of landings is estimated to €7.9 billion. The EU fishing fleet is composed of some 84,000 vessels, of which 80 per cent are smaller than 12 metres. The vessels over 12 metres in length generate more than 70 per cent of the total landings value. An important part of the small-scale fleet is located in the Mediterranean[18]. Marine fisheries contribute about 0.07 per cent of the EU employment and 0.02 per cent of EU GDP[19].

Fishing affects directly fish stocks. Marine ecosystems are affected at a 'higher level' by anthropogenic causes, leading to global warming, which in its turn affects the reproduction capacity of stocks and leads to changes in species composition as hot water species move northward[20].

Marine ecosystem concerns are expressed in the Bergen Declaration[21]:

- Pollution by hazardous substances
- Eutrophication
- Direct and indirect effects of fishing
- Effects of climate change
- Release of GMOs
- Introduction of non-indigenous species
- Environmental impact of shipping
- Impact of offshore installations.

Fishing is only one out of eight main causes of degradation of marine ecosystems and while its effects may be most direct and clearly visible (having been intensively studied), the effects of the other processes should not be underestimated.

The EU is a large fish consumer, with about 60 per cent of the fish consumption being covered by imports from third countries. Consequently, the EU's appetite for fish has ecosystem consequences in other parts of the world, where fisheries management is less developed than in Europe. In order for the European Atlantic fisheries industry to compete with high imports from third countries, the use of an Atlantic label could be a means of differentiation to increase the appeal to European consumers. This would allow the fisheries sector to market itself as a sustainable producer of high-quality fish and shellfish.

Aquaculture refers to the farming of aquatic organisms (plants and animals) using techniques to increase the production of the farmed organisms beyond the natural capacity of the environment[22]. Aquaculture can be conducted in freshwater onshore, in coastal waters and offshore. Offshore aquaculture implies that the installations are located relatively far from the coast to avoid intervening with other users of the coastal area

[17] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Blue Growth, opportunities for marine and maritime sustainable growth, 2012
[18] G. Macfadyen, P. Salz and R. Cappell, Characteristics of small scale fisheries in Europe, Study for the European Parliament, 2011
[19] STECF, The 2012 Annual Economic Report on the EU Fishing Fleet (STECF-12-10) and Eurostat.
[20] Parmesan and Yohe, Nature 421:37-42 (2003)
[21] Bergen Declaration, Fifth International Conference on the Protection of the North Sea, 20–21 March 2002, Bergen, Norway
[22] Commission of the European Communities, 2009: Working Document accompanying the "Building a sustainable future for aquaculture" Impact Assessment

(e.g. shipping and wind energy) and possibly also to avoid 'horizon pollution'. The installations are placed in exposed locations, not sheltered by the natural protection of the coastline.

The total aquaculture industry in Europe produced 1.3 million tonnes of fish and shellfish and employed approximately 65,000 full time staff in 2009. The largest aquaculture producers in the EU are France, the UK, Spain, Italy and Greece, accounting for about 75 per cent of the total value and volume. However, only 28 per cent is marine fish, mainly salmon followed by sea bass and sea bream. One of the objectives of the Atlantic Action Plan is diversify the production of fishery products so as to limited the overproduction of a small number of species which harms the ocean's ecosystem.

About 50 per cent of the production is shellfish (mainly mussels and oysters) and 22 per cent is freshwater fish. More than 90 per cent of the businesses in the European aquaculture sector are SMEs[23].

The past years have seen a strong increase in the demand for seafood, both inside the EU and worldwide. Sustainable production from wild fish stocks is limited by their natural ability to reproduce. Aquaculture offers an alternative to meet the demand and provide higher supply security. Also, in case of (offshore) aquaculture, ecological sustainability must be explicitly considered and appropriate measures taken as there are clear indications that intensive aquaculture can also lead to ecological degradation[24]. While there is a strong potential for offshore aquaculture in the EU there has not been any detailed analysis of the cost-competitiveness of such offshore aquaculture.

European coastal and offshore waters are used very intensively for a large variety of activities ranging from tourism to shipping, mining and, more recently, wind energy production. Offshore aquaculture is a relative 'latecomer' so its claim on marine space remains to be established. In view of its small size, its economic, political and legal leverage in the public decision-making processes is relatively small. Regulations and legislation regarding offshore aquaculture are almost non-existent.

Baseline situation

The following indicators have been identified to be part of an evaluation of the Atlantic Action Plan on priority 1.3:

- **Aquaculture production**
- **Fisheries - Variety of species (landings)**

The following assessment of the baseline situation for the Atlantic region on the matter of maritime safety and security will take point of departure in these indicators:

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
22	**Aquaculture production**	tonnes live weight	Eurostat	1.3	755438 tones life weight	2009
26	**Fisheries - Variety of species**	tonnes live weight	Eurostat	1.3	1 866 753 tonnes product weight Share of 5 main fishery species: 34%	2009

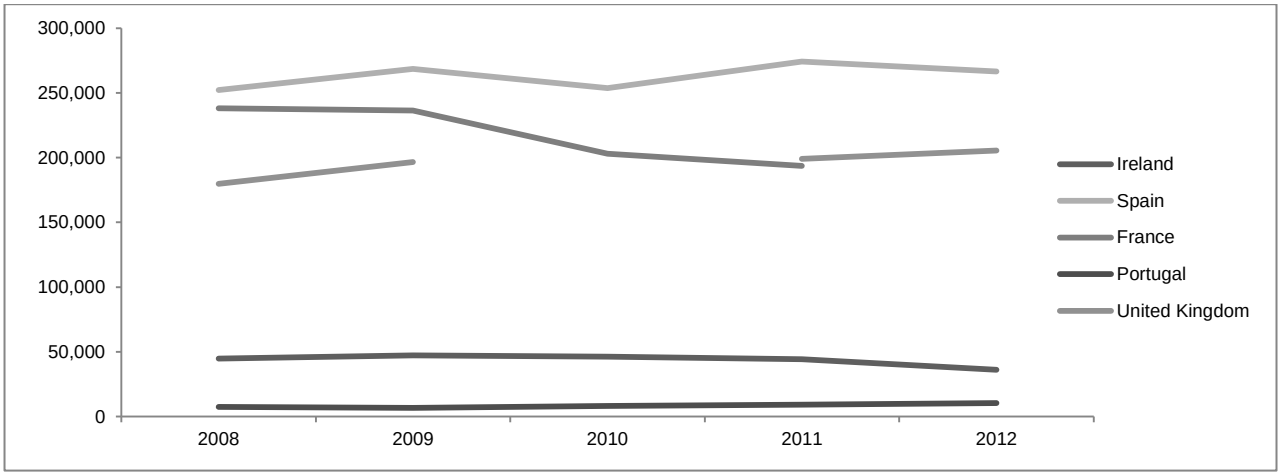
Aquaculture production

The EU (27 member states) produced 1,301,731 tonnes live weight of aquaculture products in in 2009 (the most recent year when data for all 5 countries and the EU as a whole is available. In this same reference year, the 5 Atlantic member states contributed by 58% (755,438 tonnes) to this production. Spain was the biggest contributor (268,457 tonnes; 36% of the production of the Atlantic area), followed by France (236,439 tonnes; 31%) and the United Kingdom (196,603 tonnes, 26%). Ireland (47,212 tonnes; 6%) and Portugal (6,727 tonnes; 1%) had a significantly aquacultural.

[23] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Blue Growth, opportunities for marine and maritime sustainable growth, 2012
[24] Disappearance of mangrove forests and coastal nursery areas related to shrimp farming in Asia and pollution due to salmon farming Europe.

More recent data is available for some of the countries up to 2012, enabling to establish several tendencies. No clear trend can be established for Spain, which has oscillated around its 2009 value. Aquaculture production in France was experiencing a downward trend until the last statistics recorded (2011) with a significant drop in 2010, pursued also in 2011 (last year recorded). The production in Ireland was also experiencing a downward trend, while Portugal's has been growing at a moderate pace.

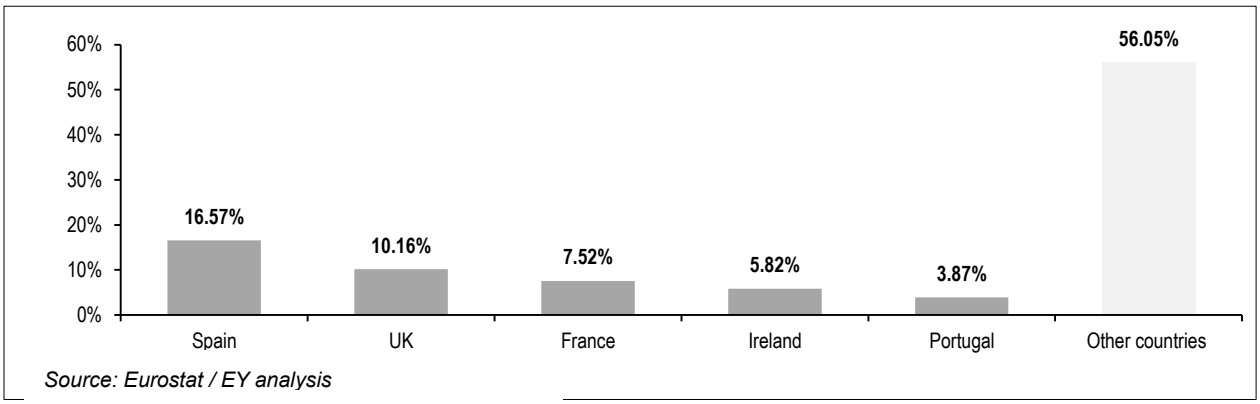
Figure 10 - Production from aquaculture excluding hatcheries and nurseries



Fisheries - Variety of species (landings)

In 2009 the EU (27 member states) production of fishery products in tonnes product weight (weight of the product as landed) was 4,247,715 tonnes. The 5 Atlantic member states contributed to nearly 44% of this production with 1,866,753 tonnes product weight. Spain was the biggest contributor (703,945 tonnes; 16,57% of the total EU (27 member states) production), followed by the UK (431,603 tonnes ; 10,16%), France (319,603 tonnes ; 7,52%), Ireland (247,050 tonnes ; 5,82%) and Portugal (164,552 tonnes ; 3,87%).

Figure 11 - Share of the total fishery production of the EU 27 (% of tonnes product weight, 2009)



Source: Eurostat / EY analysis

The 5 main species caught in the EU (27 member states) in tonnes product weight in 2009 were herring (14,96% of the total production), sprat (14,05%), Sand eels (7,76%), Atlantic Mackerels (5,52%) and Jack and horse mackerels (5,52%). Together those 5 species represented about 50% of the total fishery products of the EU. In the 5 Atlantic member states the Atlantic mackerel (10,99%), the Jack and horse mackerel (5,31%) and the Atlantic herring (3,51%) are also part of the main species caught. Overall the fishery is less concentrated in the 5 Atlantic states, since the 5 main species caught only represent about 34% of the total production.

In terms of fishery diversity there are significant differences among the 5 Atlantic member states. The fisheries production is more diversified in France and Spain, as in 2009 the 5 main species caught only represented respectively 34% and 35,3% in 2009. Ireland, Portugal and the UK have a much more

concentrated production, the 5 main species represented respectively 71,7%, 60,7% and 56,7% of the total production in 2009.

Figure 12 - Fisheries variety - main species caught (comparison: Atlantic area and EU-27)

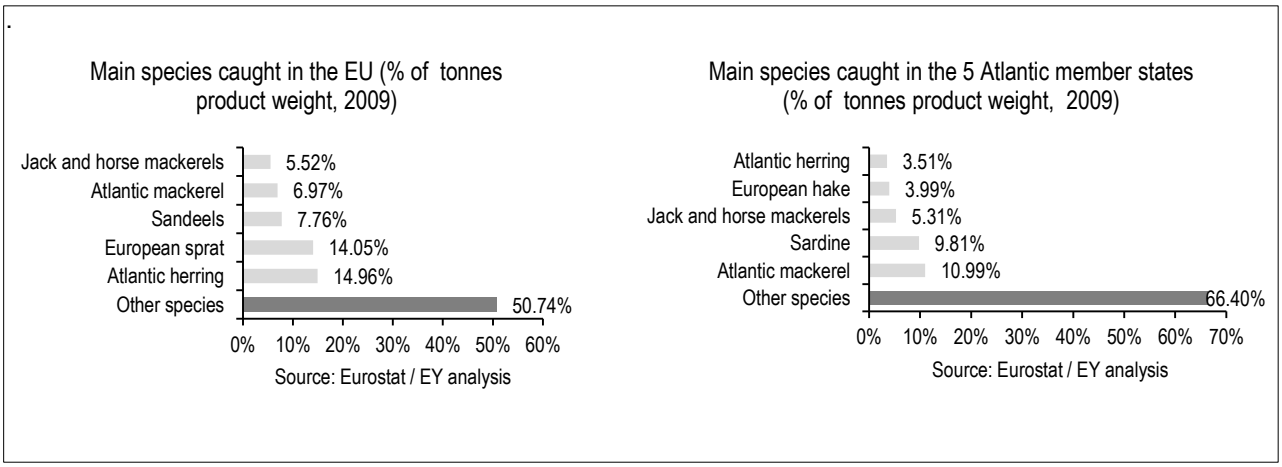
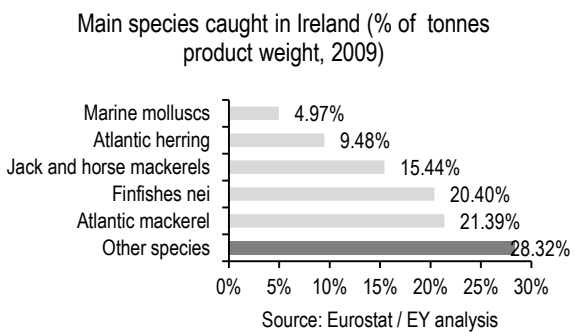
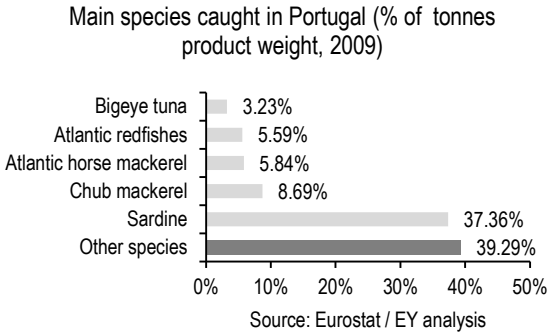
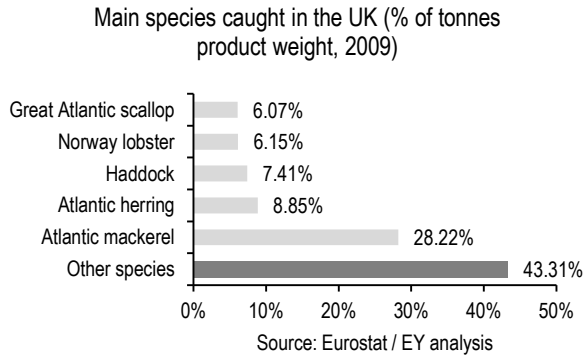
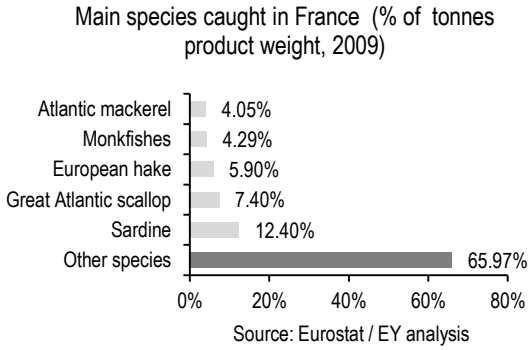


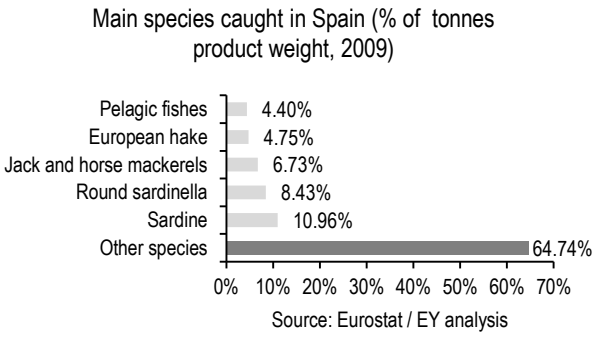
Figure 13 - Fisheries variety - main species caught (per Atlantic member state)











4 Priority 2 – Protect, secure and develop the potential of the Atlantic marine and coastal environment

The aim of priority 2 of the Action Plan is four fold. The first aim is to improve the maritime safety and security for seafarers, coastal populations, property and ecosystems. In other words to secure and maintains the possibility to operate in the region.

The second aim is to support the exploring and protection marine waters and coastal zones. This will be done by developing a European Atlantic ocean observing and predictive capability, by contributing to the tackling of global climate change issues, by supporting marine environmental protection and efforts to achieve "good environmental status".

The third aim is manage the marine resources sustainably. This is done by developing a better understanding of the technical feasibility, economic viability and environmental impact of mining for minerals in the Atlantic Ocean, and develops and test innovative mining technologies. Further special effort will be done to support the foundations for a sustainable, high-value-added European marine biotechnology industry.

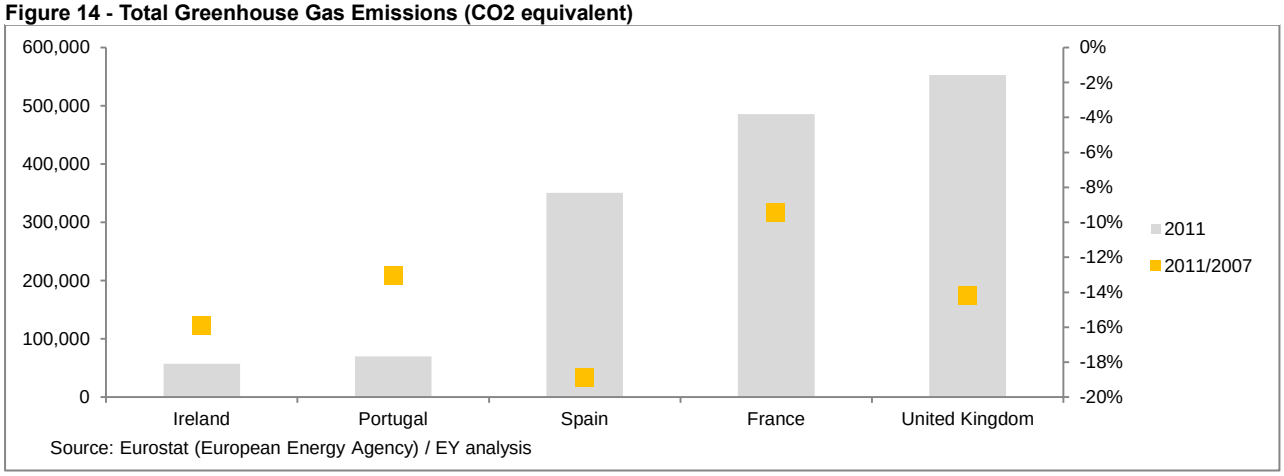
Finally, a fourth specific objective deals with renewable energy. It targets activities throughout all of the value chain, i.e. mapping of the potential of coastal areas for renewable energies, support of energy generating technologies from the prototype to market-readiness stage, the installation of renewable energy capacities and the adaptation of the transmission grid systems.

Impact indicators relating to Priority 2

Number of indicator	**Name of the indicator** *(in yellow : indicators chosen for monitoring the AAP)*	**Unit**	***Potential source (provider)***	**Related AAP priority / specific objective**	**Baseline value**	**Reference year**
3	**Greenhouse gas (GHG) emissions in the Atlantic area**	CO2 equivalents	*Eurostat*	PRIORITY 2: Protect, secure and develop the potential of the Atlantic marine and coastal environment	1 516 119 tonnes	2011

In 2011, the five Atlantic Member States produced a total of 1 516 119 tones CO2 equivalent, accounting for one third of the EU-28. This can among others be explained by the fact the UK is the second largest producer of GHG emissions in the EU, and France the fourth largest. In line with the objectives of the Kyoto protocol and the Europe 2020 strategy, all five Member States have succeeded in reducing their GHG emissions by in recent years. With the exception of France (-9%) this this reduction was faster in all Atlantic Member States than for the EU-27 (-10%) over the 2007-2011 period. Spain (-19%) and Ireland (-16%) recorded the largest decrease in this sense.

Figure 14 - Total Greenhouse Gas Emissions (CO2 equivalent)



4.1 Improving maritime safety and security

In 1999, the ship MV Erika sank off the coast of France, causing a major environmental disaster. The cost of the clean-up was close to a billion euros, and the EU feared that similar catastrophes might be waiting to happen. Only three years later in 2002, the Prestige oil tanker sank off the northern coast of Spain, once again causing millions of euros of damage to the environment. Following these two disasters, the EU called on Member States to take urgent and decisive action to counter the threat of oil spills. They also acted as a reminder to decision-makers that Europe needed to invest in better preparation for a large-scale oil spill, i.e. above-and-beyond the resources available at individual Member State level. Proposals for stricter shipping controls immediately followed.

In relation to maritime security, following the seizure of the Achille Lauro cruise ship in 1985, there was much speculation that an increased number of security incidents would follow. In recent years, the maritime industry has been broadly evaluating security at its facilities and voluntarily taking appropriate actions to improve security based on shipping trade area, geographic location, potential risk to workers and the surrounding communities, and potential risk attacks. Terrorism and political agendas are the latest trend in motivation for stealing cargo and ships, and modern pirates are increasing the violence and the severity of the attacks. However, it took the tragic events of 11 September 2001 for the maritime community to agree the need for international maritime security requirements.

In this context the safety and security also includes the costal population, the property and the ecosystems. For these issues there is not one sector that is affected but more sectors but also private interests and assets.

Even though the role of Regions in dealing with pollution varies greatly from one Member State to another, the fight against pollution is one area in which Regions often have very significant responsibilities. The coordination of European and national authorities with Regions is all the more necessary because of this.

Maritime accidents off the Atlantic coast such as those involving the vessels Erika and Prestige have caused huge environmental damage. Following these two disasters, the EU called on Member States to take urgent and decisive action to counter the threat of oil spills. They also acted as a reminder to decision-makers that Europe needed to invest in better preparation for a large-scale oil spill, i.e. above-and-beyond the resources available at individual Member State level. Proposals for stricter shipping controls followed immediately.

Maritime safety is both an element of and a necessary condition for blue growth. Greater levels of economic activity and transportation in marine environments must be safeguarded effectively, and the development of enabling systems and technology has an inherent growth potential.

High maritime transport activity, but lower in the Atlantic compared with other European waters. Many EU policy initiatives on maritime safety, however, technologies have to be further developed and implemented.

Increased trade and seaborne traffic imposing challenges on maritime safety. Prevention and remediation technologies.

Baseline situation

The following indicators have been identified to be part of an evaluation of the Atlantic Action Plan on priority 2.1:

- **Number of vessels involved in accidents across the Atlantic area**
- **Oil spill**
- **Number of non-indigenous species**
- **Flood directive: compliance with the article 6 (risk maps) and later 7 (FRMP)**
- **Oil response vessels**

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
29	**Number of vessels involved in accidents across the Atlantic Area**	number	EMSA - Maritime Accident Review	2.1	Sinking : 32 Collisions/Contacts : 288 Groundings : 143 Fires/explorations : 83 Others : 98	2010
30	**Number of non-indigenous species**	Number	OSPAR QSR	2.1	27	2010
31	**Flood directive: compliance with the article 6 (risk maps) and later 7 (FRMP)**	True / False	DG-ENV	2.1	True. Targets met for all phases to be implemented to date (3 out of 5 phases)	2013
32	**Oil response vessels**	No. of ships, capacity (m3)	European Atlas of the Seas, EMSA	2.1	6	2013
33	**Oil spills**	tonnes	International tanker owners pollution federation ltm (or EMSA, Atlas of the European Sea, Lloyd's register, EEA)	2.1	0, no major spill detected	2013

The maritime transportation sector is mature and well-developed, but action is needed to further technological strengths within maritime safety. The EU has initiated a number of policies that address safety of maritime.

Maritime safety is a multilevel topic involving the shipping industry, national and international policy initiatives in combination with regional and local involvement in enforcement, response etc. Furthermore, data needs to be generated, policies implemented and technologies developed. Successful action on all levels would be needed to ensure safe maritime transport in the Atlantic. Much of the work on prevention and surveillance is carried out at the EU and IMO level, whereas coordination of search and rescue, emergency response and clean-up is organized at national, regional and local level.

Ensuring maritime safety requires technological developments with inherent blue growth potentials. Examples of priority areas for future development are enhanced exchange and sharing of information in general, and specific developments within advanced detection systems of oil spills and refined oil recovery systems among others. One specific initiative of technological development within the maritime safety sector is the Spanish-based Technology Platform for Coastal and Marine Environment (PROTECMA) that

develops and implements an R&D strategy for protection, pollution prevention and control. Through gathering of science, technology and businesses, the platform seeks to develop technology.

Safety is on the maritime agenda and is given political attention, not at least on the EU level where measures include the following:

- Improved identification and monitoring of all ships approaching and sailing in European waters and ports
- Simplified and harmonised procedures for the provision and use of information on hazardous or polluting freight, through the use of electronic data interchange
- The mandatory use of voyage data recorders (maritime black boxes) and automatic identification systems to facilitate accident investigation and traffic monitoring and control
- The establishment of common databases and methodologies for maritime safety and accident investigation.

Research in the area of maritime safety has focused on developing operational and technological concepts capable of meeting the changing needs of the demand side while enhancing safety and the protection of the environment. Research can be divided into several categories[25]:

- Introduction of innovative designs, technologies and working practices for safer ship operations
- Development of efficient traffic management systems for sea and river operations
- Education, human factors and improvements to the working environment
- Reduction in environmental risks and the promotion of environmentally friendly operations.

Given the size of the Atlantic, there are significant opportunities to improve the efficiency and effectiveness of MS operations in these areas, both within the agencies within each jurisdiction and across jurisdictions through greater cooperation, information exchange and shared analysis.

Future trends that will highlight the need for a coordinated approach include:

- Increased shipping
- Maritime spatial planning: increased competition for space and keeping dangerous ships away from protected areas etc.
- Incentives for quality: good standard/record gives better routes (including the use of certificates, 'above compliance' standards).

EU have taken the following initiatives on maritime safety and crated created regulation that addresses maritime safety, including:

- Traffic monitoring and information system (Directive 2002/59/EC)
- Ship-source pollution and the introduction of penalties, including criminal penalties, for pollution offences Directive (2005/35/EC)
- Port State control (Directive 2009/16/EC)
- Ship inspection and survey organisations and for the relevant activities of maritime administrations (Directive 2009)
- Ban on single-hulled oil tankers carrying heavy grades of oil from entering the waters of the European Union from 2015.
- Regulation (EC) No 1406/2002 of the European Parliament and of the Council of 27 June 2002 establishing a European Maritime Safety Agency

Furthermore, the MARPOL conventions at the international level include regulations aimed at preventing and minimizing pollution from ships – both accidental pollution and that from routine operations.

[25] EXTRA consortium for DG Energy and Transport, (2001) “Maritime Safety: Results for the transport research programme”

Specific to the Atlantic Region, the OSPAR convention for the protection of the marine environment of the North-East Atlantic also provides the framework for marine safety issues.

The indicators do not fully cover the intentions of the Atlantic Action Plan on the following topics:

- Trafficking
- in-situ instruments
- better integration of data

On the better integration of data the EU works with Integrated Maritime Surveillance. Integrated Maritime Surveillance is a part of the Integrated Maritime Policy, and is about providing authorities with ways to exchange information and data, thereby making surveillance cheaper and more effective. Currently, the EU and national authorities responsible for different aspects of surveillance – e.g., border control, safety and security, fisheries control, customs, environment or defence – collect data separately and do not necessarily share them, resulting in duplication of data collection activities. Therefore, at European and at national level, there is a need to integrate the co-ordination and inter-operability of the Member States' ability to exercise sovereignty in European waters. In this regard, good progress has been made with Member State co-operation in the area of maritime safety, security and surveillance, in particular in relation to:

- emergency at sea responses (including search and rescue).
- pollution response (including catastrophic events), environmental protection, fisheries enforcement.
- improved vessel traffic management and information.
- maritime security and surveillance at sea (including border control, counter-narcotics, human trafficking, smuggling and other forms of organized crime).

In addition, the EU has taken various maritime safety actions:

- **The European Maritime Safety Agency in Lisbon** provides technical assistance and has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long-range identification and tracking of vessels.
- **CleanSeaNet** is a satellite-based monitoring system for marine oil spill detection and surveillance in European waters.
- **SafeSeaNet** is a European platform for maritime data exchange
- **Long Range** Identification and Tracking identifies and tracks EU flagged vessels worldwide and integrates them into the wider international Long Range Identification and Tracking system.
- **THETIS** is the inspection database on Port State Control.
- **STCW** Information System provides information on maritime administrations and MET establishments in the EU, including maritime programmes, number of students and graduates.

In terms of maritime security, the International Maritime Organization (IMO) in December 2002 adopted new international maritime security requirements in the SOLAS Convention 1974, new Chapter XI-2, and a new International Ship and Port Facility Security (ISPS) Code. Until then, the majority of terrorist surveillance, and response measures, put in place throughout the EU have been as a result of individual action at Member State level. These include measures to protect against terrorism in the maritime sector which vary significantly across the EU.

Following adoption of the new IMO security regime, EU Member States agreed the need for measures at Community level. The following Regulations and Directives have been put in place:

- Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing **ship and port facility security**. The purpose was to introduce and implement in a

harmonised manner measures aimed at enhancing the security of ships engaged on international voyages and domestic shipping, including associated port facilities.

- Directive 2005/65/EC on **enhancing port security**, laying down procedures for conducting Commission inspections in the field of maritime security at the level of each Member State and of individual port facilities and relevant Companies.
- Regulation (EC) No 324/2008, to incorporate procedures for **monitoring Member States' implementation of the Directive jointly with the Commission's inspections** under Regulation 725/2004. On the basis of this legislation, the Commission conducts inspections to verify the effectiveness of national quality control systems and maritime security measures, procedures and structures at each level of each Member State and of individual port facilities and relevant companies.

The Commission is assisted by a Regulatory Committee (**Maritime Security Committee - MARSEC**) acting in accordance with the regulatory procedure. MARSEC is a Regulatory Committee established by virtue of Article 11 of Regulation (EC) No 725/2004 and it also assists the Commission with regard to its activities under Directive 2005/65/EC. The Regulatory Committee is chaired by the Commission and consists of experts representing all Member States. Periodical exchange of information between Member States and Norway and Iceland, has taken place. Best practices and indications on national instructions have been shared in this forum and, most importantly, it was recently agreed to create a mechanism for secure mutual information where each Member State could inserts sensitive information i.e. security levels adopted, threat evaluations and others topics relevant for the security of European shipping.

Furthermore, the Commission meets regularly the **Stakeholder Advisory Group on Maritime Security (SAGMaS)** which is a forum where the stakeholders can express their views on the work of the Regulatory Committee, MARSEC. The Commission will consider inviting to meetings of SAGMaS any stakeholder organisation that is a European or international (and not merely a national) organisation, and has a demonstrable professional interest in the subject of maritime security (as covered by EC legislation), and in the view of the Commission will offer an added value to the subjects under discussion at the particular meeting of the Committee.

EMSA was established in 2003, following the fallout from the Erika (1999) and the Prestige (2002) accidents and their resulting oil spills. EMSA provides technical assistance and support to the European Commission and Member States in the development and implementation of EU legislation on maritime safety, pollution by ships and maritime security. It has also been given operational tasks in the field of oil pollution response, vessel monitoring and in long range identification and tracking of vessels.

EMSA was established by Regulation (EC) No 1406/2002 as a major source of support to the Commission and the Member States in the field of maritime safety and prevention of pollution from ships, and subsequent amendments have refined and enlarged its mandate.

In relation to maritime security, EMSA's mandate is to provide technical assistance to the Commission, including in the performance of the Commission's inspection tasks, in respect of ships, relevant companies and Recognised Security Organisations (RSOs) authorised to undertake certain security-related activities. These inspections started in 2005 with the Member States' National Administrations, for which the Commission requested EMSA's participation in relation to the ships' part. EMSA participated in the first inspections of ships in 2006 and in 2007 the first inspections of shipping companies and RSOs have taken place.

Investment/policy actions

Ongoing dialogue with the maritime industry is necessary on voluntary measures to promote safety, together with the creation of a business environment in which quality-minded operators are rewarded. Research in the area of **maritime safety** has focused on developing operational and technological concepts capable of meeting the changing needs while enhancing safety and the protection of the environment. Research programmes have focused on topics such as secure container-screening, biometric ID port perimeter security, satellite-based tracking of maritime areas and blue border surveillance. This has enabled

a number of maritime security research projects to be undertaken, including SOBCAH, SECCONDD, AMASS, OPERAMAR and UNCOSS.[26]

The EU is already involved in several projects to improve the monitoring of sea areas and vessel traffic in the Atlantic. These include: ARCOPOL + is a project that aims to further improve maritime safety and Atlantic area coastal pollution preparedness and response against oil and Hazardous and Noxious Substance (HNS) spills through technology transfer, training and innovation.[27]

Furthermore, several cooperation structures and networks on maritime safety have been launched by the Atlantic area in former programming periods.[28] These include:

- **Green Atlantic for Sustainable Development**: this was part of the 2000-2006 Atlantic area programme and served as both a process of integration and development of competences and methods aimed at creating a European platform of expertise and action for maritime and environmental safety issues.
- **Emergency Response to Coastal Oil, Chemical and Inert Pollution from Shipping (EROCIPS)**: The EROCIPS Project has worked to strengthen the shoreline response to such incidents, minimising the potential environmental and socio-economic impacts.
- **Improving Coastal and Recreational Waters (ICREW)**: The ICREW project aimed to assist Member States in improving their compliance with the Bathing Water Directive and to provide the tools and techniques to assist Member States to comply with the requirements of the revised Bathing Water Directive.
- The EU is already involved in several projects to improve the monitoring of sea areas and vessel traffic. These include SafeSeaNet, EUROSUR, and ARCOPOL +.¨
- The Common Information Sharing Environment (CISE) currently being developed jointly by the European Commission and EU/EEA member states[29] will integrate existing surveillance systems and networks, such as European Border Surveillance System (EUROSUR), for the exchange of information on irregular migration and cross-border crime and the SafeSeaNet system, thereby giving all concerned authorities access to the information they need for their missions at sea. CISE will make different systems interoperable so that data and other information can be exchanged easily through the use of modern technologies. In turn, it will lead to better and cheaper maritime surveillance.

4.2 Exploring and protecting marine waters and coastal zones

This priority is divide into tree sub priorities where the first is about the improving the ability to observe and predict the marine waters in the Atlantic region. The second about how to address the global climate change in the Atlantic region and finally the third about the how to support the achievement of good environmental status of the Atlantic waters.

This priority includes additionally to these many sub actions/priorities which is why when determining the baseline certain selection have been done. The focus will be on the following aspects which are expressed by indicators:

- **Biotechnology patent applications to the EPO**
- **Protection of marine and coastal environment**
- **Marine protected sites**
- **Compliance with MSFD**

[26] Centre for Strategy and Evaluation Services, "Ex-post Evaluation of PASR Activities in the field of Security and Interim Evaluation of FP7 Security Research, Maritime Security and Surveillance - Case Study", January 2011
[27] ARCOPOL: The Atlantic Regions' Coastal Pollution Response, 15th February 2012
[28] Carvalho, A. (2007), "Maritime Safety and Risks Prevention in the European Atlantic Coast: Challenges for a Transnational Cooperation Framework"
[29] COM(2010) 584 final, "Draft Roadmap towards establishing the Common Information Sharing Environment for the surveillance of the EU maritime domain"

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
21	**Biotechnology patent applications to the EPO (by priority year and NUTS 3 region)**	Number of patent applications	Eurostat	2.2	Range across Atlantic regions : 0,2 - 21,04 Average: 5,31	2009
23	**Protection of marine and coastal environment**	Target met/not met	ICES, OSPAR	2.2 / 2.3	Not met	2012
24	**Marine protected sites**	superficie km² / nb of sites / % in costal area	EEA	2.3	21 398 044,4 m2	2012
25	**Compliance with the Marine Strategy Framework Directive**	True / False	DG-ENV	2.3	False (Portugal was not fully complient)	2012

Baseline situation

As noted in the Indicators report, the indicators do not capture the first priority about observing and predicting capability as no general indicator have been formulated due to the characteristics. The baseline concerning this topic will be based on the identification of specific initiatives or concrete projects.

The ability to deal with the global climate changes in the area is analysed by estimating the GHG emission in the area. Further the AP includes action on the estimation of a footprint for the region. This can only be assessed by concrete project. The development of platforms to share best practice on emission reduction and energy efficiency does not have to be exclusive for this region and an assessment later should focus on the use of existing platforms.

Biotechnology patent applications to the EPO

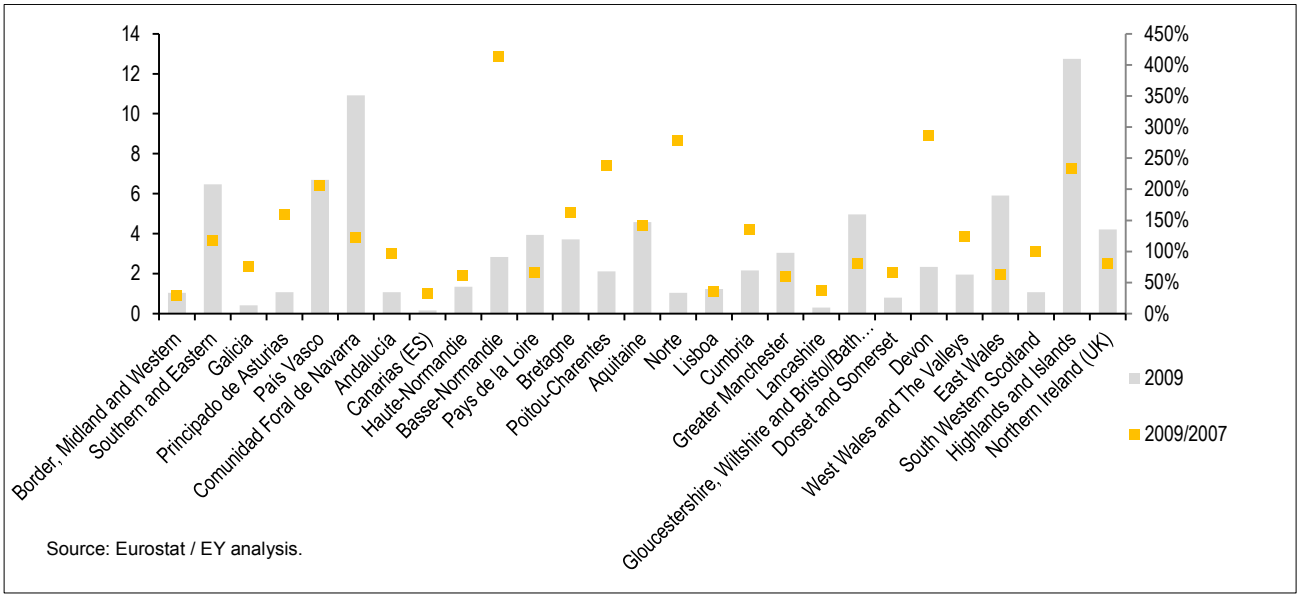
The number of biotechnology patent applications to the EPO in the Atlantic area gives an indication of the level of research being conducted using the area's maritime specialization (although not exclusively). The patents can relate to all tree sub-priorities: the observation of marine water, the global climate change or the achievement of good environmental status.

In 2009 the average number of application to the EPO in the Atlantic area was 2,61 patent per million habitant. This average only represents 60 % of the EU 27 average of 4,38 biotechnology patents application to the EPO per million habitant. When patents applications in all fields are considered, in 2009 the patent application per million inhabitants of the Atlantic area only represented 50% of the average patent application per million inhabitant of the EU 27. In other words, the difference in terms of patent applications between the European average and the Atlantic area average was not as strong in the field of biotechnology as it was in general.

When comparing the data in 2009 with the data in 2007, it can be noticed that in about half of the regions the number of patent application increased. This can be explained by the fact that in 2007, the number of patent application was particularly low. The evolution will have to be considered when more recent data are available since the European Patent Office (EPO) announced in 2010 that its evaluation of patent applications would become stricter.

Moreover It is important to note that the data covers all sectors related to biotech, without the ability to isolate maritime biotech.

Figure 15 – Biotechnology patent applications to the EPO



Protection of marine and coastal environment

The action concerning utilization of existing data and mechanism to develop and maintaining a programme for monitoring the coasts, the seabed and the water raises the question: Are the existing knowledge and data being utilized to maintain an integrated system for surveying and observing?

There is one initiative EuroSITES which tries to establish an environmental status of seabed and water columns. EuroSITES is an observation network already providing integrated, in situ datasets in near real-time to GMES. The coverage for the Atlantic region is rather good and information can be found about CO_2, Nitrate, Chl-a O_2 and variables such as temperature and current.

No initiatives to combine the information integrating the information about the seabed mapping undertaken at national level. Emodnet have integrated the information for the Northern part of the region. The initiative is led by IFRAMER.

The Member States are required by October 2014 to submit a monitoring program to the DG-ENV. If new instrument or platform for sharing this information have been developed is uncertain at this stage. No specific project have been identified. There are a number of project sharing data however not directly monitoring the ecosystem. Also the fisheries sector is working toward even more sustainable approached with regards to the ecosystem please see more under priority 1.3.

The stewardship, cataloguing and distribution of interoperable marine data and a multi-resolution seabed map similar to the objective of the EMODNET project, described in the key projects section linked to this specific objective. The success of this project will determine if this is fulfilled.

Also the development of a coastal oceanographic forecasting systems relays on the success of an ongoing project, Copernicus. See below the summary of the project.

The Action plan also includes an intention to support the establishment of an estimation of the carbon footprint. This will require a project that collects primary data from the region and transform them into a overarching estimation. In this baseline the footprint is assessed more simply taking the per habitant CO_2 level and multiplying by the inhabitants of the region. An in-depth analysis will provide a much more robust policy estimation allowing to use information in a policy context. Following that the Action Plan intents to develop a platform for exchanging best practice on emissions reduction and energy efficiency, this does however not have to be an initiative specifically for the region but could be part of a broader scope. No platform has been identified at this stage that could fulfill the aim this objective. The last action about the climate change is directly linked to the corporations between institutions and regions which are covered in Priority 1 – objective 1.1..

Marine protected sites

The ecological coherence for the MPA is assessed by OSPAR in 2013. The policy objective being*: "Policy Objective: A network of marine protected areas should be achieved, which by 2012 is ecologically coherent, includes sites representative of all biogeographic regions in the OSPAR maritime area, and is consistent with the Convention on Biological Diversity target for effectively conserved marine and coastal ecological regions".*

The result of the assessment showed that the there is a good coverage in the territorial waters areas in the whole OSPAR area of 21,74%. In total 333 areas were appointed. In the Atlantic region relevant for this baseline, they cover between 3,2% and 7,9% of all waters. At this stage it is not possible to assess if the appointed areas form an ecological coherent network however some progress is detected and a full assessment can be done at a later stage.

Compliance with the MSFD

The monitoring program under the MSFD is due in October 2014 and the Member States will by then have to submit it to the commission. After the submission the degree of coordination between the Member states and with OSPAR can be assessed.

4.3 Sustainable management of marine resources

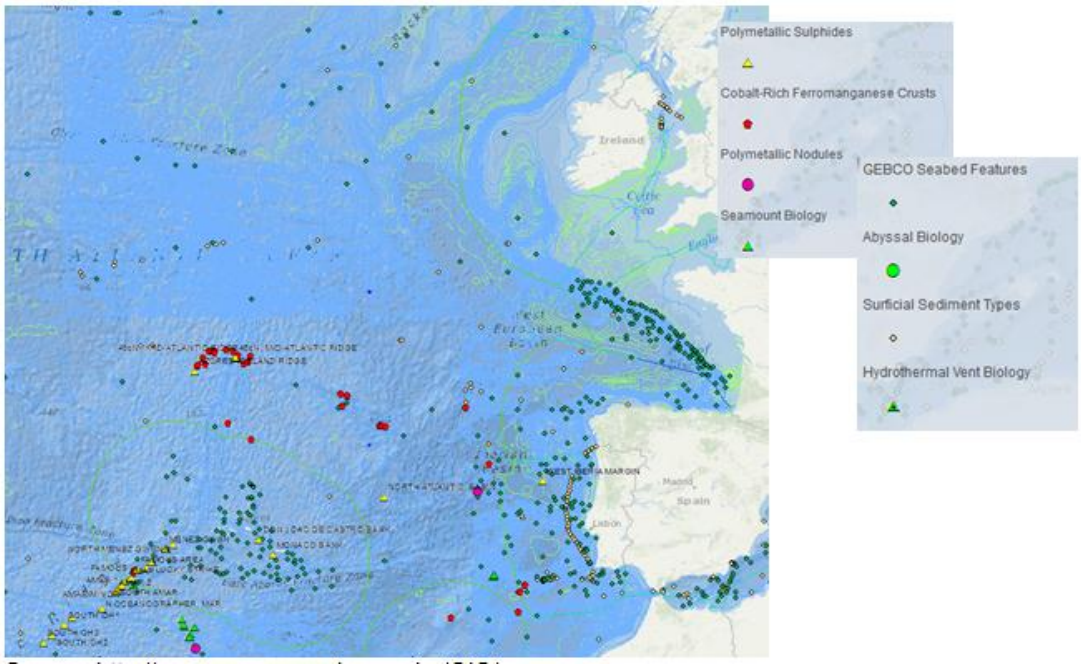
Marine resources can naturally be divided into two groups; biotic and abiotic resources. The resources are being extracted from the coastal and deep-sea areas of the European Atlantic basin. Based on this assessment, a baseline can be established to be utilized for the purpose of an evaluation of the success of the Atlantic Action Plan at a later stage.

European coastal zones are among the most well studied in the world. There is substantial, accumulated knowledge about species, habitats and ecological functions, and progress is being made relative to ecosystem structure and dynamics. There is also a generally good understanding of the environmental impacts of human activities, in particular of the input of nutrients and pollutants, on species and habitats. Recent years have witnessed a growing interest for better understanding whole ecosystem processes, partly in response to the requirements of the Marine Strategy Framework Directive. The characterization of whole-ecosystem dynamics, their response to multiple natural and anthropogenic forces, including climate change, and issues of ecosystem resilience have received increasing attention in recent years.

Deep-sea environments remain, despite remarkable advances in the last two decades, largely unexplored. Progress has concentrated on specific habitats such as hydrothermal vents and seamounts, primarily for their richness and uniqueness, as well as for their vulnerability to disturbances. Progress in molecular analysis techniques has enabled the characterization of novel deep-sea microbial communities. High-resolution geomorphologic and geochemical mapping is advancing at increasing pace, with the EU recently launching an initiative for high-resolution seabed mapping of all European waters. Knowledge about the availability and distribution of mineral resources in the deep sea remains patchy, with current exploration efforts concentrated on the more easily detectable systems (e.g. hydrothermal vents), as well as on areas where earlier exploratory work had been done and where current exploitation is more advanced (e.g. the Clarion Clipperton Zone in the Pacific). Uncertainties as to the response of deep-sea ecosystems to large-scale transformations are prompting a growing interest for studies of long-term temporal and spatial dynamics.

Deep sea minerals include polymetallic manganese nodules that usually occur on the abyssal plains at depths commonly below 4 000 metres, cobalt-rich crusts that occur along the flanks of undersea extinct volcanic edifices (between 600 and 7 000 metres), and massive sulphide deposits that form at hydrothermal vents in areas of volcanic activity at depths ranging from 400 to 5 000 metres. The deposits, mined at volcanically inactive sites, contain valuable metals such as cobalt, gold, zinc, copper, nickel, and manganese and rare earth elements. In addition, large amounts of sand, gravel and maerl are being exploited in coastal areas, often in association with dredging activities. In addition, marine hydro carbons can prove to be commercially viable for instance off the coast of Ireland, Portugal (Madeira and Azores) and the Canary Islands where exploration is taking place.[30] The map beneath shows which resources are present in the Atlantic waters and where they are located.

There is no current exploitation of deep-sea minerals off the European coasts and no established viable deep-sea mining worldwide. Dredging of material for construction purposes is widespread, but the marine



of undergoing diamond
uated in the sea

areas contribute with only a couple per cent of Europe's total production of 3,500 Mt[31].

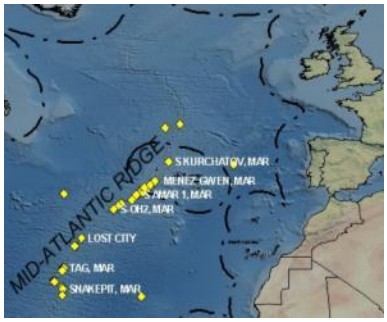
Source: http://www.mapserver.isa.org.jm/GIS/

Baseline situation

The mounting evidence of non-linear responses of marine ecosystems to multiple stressors requires much improved knowledge about whole-system dynamics and their ability to maintain key functions and services. Anticipating climate change impacts at this level is of particular concern. Implementation of the MSFD will require continued investments in understanding the cumulative impacts of human activities on marine biotic and abiotic systems, both in coastal and deep-sea areas. Harmonisation and sharing of monitoring data at EU level is expected to support these efforts. With respect to deep-sea environments, there is mounting concern with lack of knowledge of impacts of extractive activities, as well as of the adequacy of management measures. In general, there is limited understanding of the effectiveness of policy measures for protecting marine natural resources.

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
20	**Non renewable resource extraction**	m3/toeq	JRC	2.2	7Mt	2012

Exploration and exploitation of deep-sea mineral resources in the Atlantic is currently hampered by uncertainties relative to the applicable legal framework, and, to a lesser extent, by important gaps in knowledge about the location, type and size of these resources. While specific deposits have been identified in the European Atlantic basin,[32] most of the area remains uncharted as to possible exploitable deposits. Sampling of mineral deposits is scattered over large seafloor areas, and consequently estimations of the size of the resource as a whole are currently not possible.



In Ireland the mining sector for gravel and sand pits clays and kaolin 1471 are employed in 2010 this has however decreased from 2632 in 2008. This activity result in a turnover of 414 mill euro which has also more the halved since 2008 while the number of enterprises have only fallen from 81 till 60.

The data for Spain does not allow identifying the activity isolated for the Atlantic region. In Span the activity is much low and only 641 are employed in the sector which generates a turnover of 86 mill euro divided between 48 companies.

In Portugal 70% of the activity is in the Atlantic region that equals 1018 employed and making a turnover of 72 mill euro.

In UK the sector employs 3500 people in the Atlantic region who generates a turnover of 366 mill euro between 95 enterprises. The sector have decreased since 2008 but not as significant as in the other countries.

The industry also draws on other sectors supporting the activities it has however not been possible to generate data to express these activities.

Source: Unpublished data gathered under the MARNET project.

[31] 2009-data; IFREMER, http://wwz.ifremer.fr/drogm_eng/Mineral-resources/Marine-materials/Economie/Production-europeenne
[32] See for example International Seabed Authority, Web GIS Application, http://www.mapserver.isa.org.jm/GIS/.

Already in 2013, exploitation of Pacific deposits of copper and gold in sulphide deposits was supposed to be initiated by Nautilus Minerals, a Canadian company, at a water depth of 1,600 metres. However, the current financial crisis is apparently delaying mining the activities off the coast of Papua New Guinea to at least 2014.

Research focus is on basic research into geological, biological and oceanographic studies, financed through public European and national funding rather than commercially driven exploration.

For the purpose of commercial exploitation, technology may not yet be mature and ready for large-scale activities at great depth. Much has been learned from the offshore hydrocarbon sector, though, and commercial marine mining companies are presently developing dedicated equipment for operations in the deep sea.

Knowledge of the distribution and amounts of minerals in the Atlantic is limited, and an area where most activities are driven by public funds. In the 1970's, many resources were directed into the development of deep sea mining in the Pacific Ocean, but uncertainties as to the applicable legal regime compromised the longer-term viability of these investments. Currently, public and private investments are being directed at areas in international waters, primarily in the Clarion Copperton Zone in the Pacific, but also to a minor extent in the Indian Ocean and the mid-Atlantic Ridge in the European Atlantic basin. Future developments in this sector will depend on a combination of factors. First, the demand for minerals and the respective prices will have to attain a high-enough level to justify the initial investments and the operational costs of deep-sea mining. In this regard, despite fluctuations in the recent past, the demand for and prices of copper, zinc and manganese in the world market are expected to continue to rise. Second, exploring new reserves at sea will depend on the evolution of existing and future reserves on land. As mining on land moves to increasingly marginal reserves, deep-sea reserves might prove more attractive not only from an economic, but also from an environmental and social perspective. Third, the regulatory framework for mining activities in deep-sea international waters is expected to continue evolving towards greater legal clarity and predictability, thereby providing greater certainty for investments. Finally, it should be borne in mind that many of the metals found in the deep-sea are currently imported into the EU from land mines. Considering that e.g. 49% of new copper mining projects are in countries with political risk[33], questions pertaining to supply reliability are likely to arise and justify the shift to other sources such as the deep sea.

Marine bio resources include products and processes from sea organisms, including cultivation of algae as well as biotechnological utilization at cellular or molecular levels. Uses span from healthcare, food, cosmetics to bio-energy and many others.

Biodiversity of oceans is high but largely unknown. The global market for biotechnological use of the marine organisms was estimated at €2.8 billion in 2010[34]. Harvest of algae remains on a small scale across Europe; it has been reported that the European production of macro algae ranges from 30-60 tonnes per year, which is minute in comparison to Japanese and Chinese counterparts. Algae extraction is at some 73,000 tonnes annually declining from more than 120,000 tonnes in the late 1990's.[35]

Both biotechnological use of marine organisms and algae harvest can be seen as immature industries with development potential. However, the field is highly diverse implying that subsectors are at very different levels of development.

Bio resources are the focus of both an active European group of public research institution and correspondingly numerous start-up and small companies with niche specialisation and a few larger companies within e.g. the cosmetic and pharmaceutical industries.[36]

During the last decade, more than 500 European patents in marine biotechnology have been taken out, which is 12% of global patents, whereas 36% of published scientific papers in the field worldwide have origins in EU-27. [37]

[33] McKinsey Global Institute, 2011: Resource Revolution: Meeting the World's energy, materials, food, and water needs

[34] Marine Board, 2010: Marine Biotechnology: A new vision and strategy for Europe

[35] Marine Board, 2010: Marine Biotechnology: A new vision and strategy for Europe

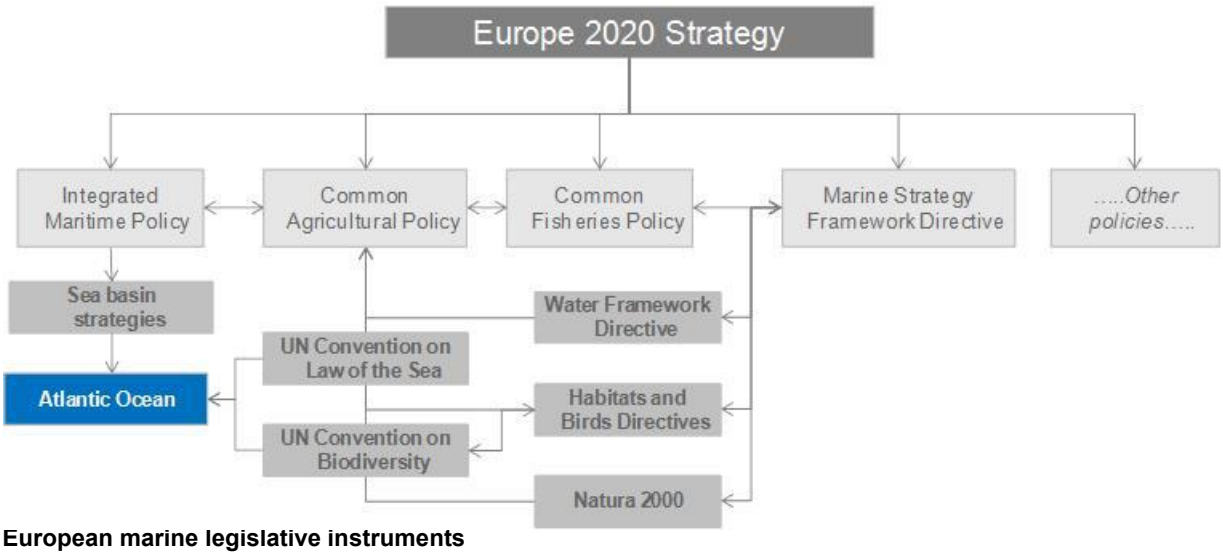
[36] DG MARE, 2012: Blue Growth, sub-function 2.4: Blue Biotechnology

[37] DG MARE, 2012: Blue Growth, sub-function 2.3: Marine Aquatic Products

Utilization of marine mineral resources is still in its early stages when it comes to deep-sea exploration and exploitation. Critical mass is necessary, and technology, skills and infrastructure have to improve in order to cope with technical challenges such as those posed by the great depths at which operations take place, as well as with issues of a social and environmental nature. It has been put forward that a full-fledged mining project would require financing of at least €500 million, a value that may be considered low in comparison to the development of a new mine on land, which might cost up to ten times more. However, the price of metals, available technology from the offshore hydrocarbon sector and recent activity point at greater future activity. On the other hand, strategic work relating to the currently intensified exploration to subsequent phases of extraction, transportation and processing is still missing in the main. Although industrial activity is already seen in these domains, there is room for an improved regulatory and managerial framework, for example with regard to environmental and safety standards.

At this stage, there is no EU legislation to control the utilisation of coastal and deep-sea natural resources. There are national level regulations directed towards specific resources to limit or to control exploitation (e.g. sand, gravel, oil and gas).

Many legislative instruments will affect the possibilities of utilising natural resources in coastal areas and the deep sea in the Atlantic Ocean. The figure below gives an overview of these taking its point of departure in the 2020 strategy.



European marine legislative instruments

Note: Other policies include e.g. research and technology (Horizon 2020), transportation (TEN-T) that overlaps the marine sphere.

Current regulations are directed towards e.g. minimising environmental impacts, licensing and taxation of activities. The instruments vary between the different legislative tolls where some ban all activities and others set requirements as to how the resources are exploited. The choice of instrument is mostly a national decision except for funding tools, which are just as likely to be EU funded and designed. Above that, the different sectors might also have to observe sector-specific regulation. Of specific initiatives can be mentioned the IMP sea-basin approach under the IMP closely linked to the macro regional strategy. There is no specific allocation of funding through regional funds but the task is to find ways to use existing resources, legislation and structures to be better used for the benefit of the whole region.

Under the EU macro-region, concept strategies can be developed for areas "including territory from a number of different MS or regions associated with one or more common features or challenges"[38] The Atlantic Arc Commission has been promoting the set-up of such a macro-region in the Atlantic with an integrated territorial management strategy. In September 2012, the European Parliament passed a resolution on the EU Cohesion Policy Strategy for the Atlantic Area to be further developed under the Atlantic Forum.

[38] http://ec.europa.eu/regional_policy/cooperate/baltic/pdf/macroregional_strategies_2009.pdf

The present infrastructure and the already planned expansions to obtain comprehensive access to the Atlantic are crucial to the possibilities of attracting new activities or expand existing.

The current framework for the activities in the Atlantic area is expected to evolve nationally and internationally in the coming years. At EU level, the Marine Strategy Framework Directive will be developed and implemented, and in response to the potential development of coastal and deep sea natural resources, national policies will evolve. There is no ongoing European process to harmonize the framework for these marine resources. An overview of current framework pillars in the area is given in the table below.

Each directive and policy will be implemented at national level to reflect the national interests. That will lead to possible differences between the MS in the legislative framework. Most of the legislative framework in place addresses the preservation or protection of areas or species.

The following issues causes the development to slow down:

- Uncertainties regarding the regulatory regime, in particular in the face of growing concerns about environmental consequences for deep-sea communities add to the difficulties faced by commercial mining interests. Sand and gravel mining, occurring mainly in coastal waters, is a mature activity of relatively small expression in the area.
- Political decisions would have to include many considerations, namely including the opinion of EU institutions, Member States, concerned regions and other stakeholders. To assess these opinions, values are attached to non-traded goods and services. These are non-monetary values and can be assessed by the use of methods to reveal the willingness to pay for different alternatives or by determining the trade-off between alternatives. The results can be used when assessing the cost and benefit be specific alternatives.
- Infrastructure plays an important role when activities and actions are planned The level of infrastructure is more or less proportional with the growth in an area. Many activities related to exploitation require a good infrastructure, e.g. sand and gravel is very heavy and will need to be transported to the construction sites, whereas exploitation of less heavy resources from e.g. bio resources might require smaller but more specialized infrastructure less. To support the overall economic development of different regions, the EU has developed a policy framework that aim at meeting the needs of the industries and transport users while at the same time reducing the impact on the environment. One of the initiatives is the Trans-European Transport Networks (TEN T) which are a planned set of road, rail, air and water transport networks designed to serve the entire continent of Europe.

4.4 Exploitation of the renewable energy potential of the Atlantic area's marine and coastal environment

Marine renewable energies, i.e. ocean energy (tidal range, marine current, wave, ocean thermal) and offshore wind bear a significant potential to respond sustainably to the future energy demand in Europe.

The International Energy Agency (IEA) has estimated the global total installed capacity of ocean energy in 2011 at 519 MW, most of which related to tidal power plants. Although the other existing projects are at the demonstration stage, the potential for ocean energy development - estimated at 748 GW by 2050 - is vast. In addition to this, there are strong expectations for the offshore wind industry: with targets of 40GW installed in Europe by 2020, representing 170,000 jobs, growing to 150GW installed by 2030, representing 300,000 jobs. By 2050, 460GW is planned to be installed.

Marine renewable energies present significant potential to respond to the future demand for energy in Europe in a sustainable manner. In fact, it is estimated that 0.1% of the energy in ocean waves could be capable of supplying five times the entire world’s energy requirements. In addition, marine renewable energies present the potential to reduce greenhouse gas emissions, enhance the autonomy of European energy supply, and produce significant economic and social benefits through the creation of jobs.

Europe could have a leading position in the ocean energy landscape, since the European Commission’s roadmap plans for an installed capacity of 3.6 GW by 2020 and 188 GW by 2050 which would represent

15% of Europe's energy mix. The market could reach €90 billion by 2030 with an annual market of €15 billion. Ocean energy also offers substantial employment potential of 160,000 direct jobs by 2030, and more than 470,000 direct and indirect jobs by 2050 according to the European Ocean Energy Association (EU-EOA). For example, the French renewable energy sector is still not mature, however it is anticipated that marine renewable energies (across all technologies) will generate 3 jobs per megawatt installed, resulting in the creation of 18,000 jobs in this sector by 2020.

The European Commission's commitment to developing marine renewable energies is one of the key features of its policy to achieve the EU 2020 targets and make Europe's economy greener. The EU is seeking to source 20% of its energy from renewable sources by 2020 (see table below, showing National target for Ocean Energy by 2020). Furthermore, it is currently estimated that by 2050, a substantial proportion of Europe's electricity supply could be provided by renewable ocean energy generated off the Atlantic coast.

The European Atlantic seaboard is arguably one of the world's richest areas in terms of wind, wave and tidal energy generation. This is why the Atlantic strategy argues the potential of the Atlantic's powerful waves and strong tides needs to be exploited, asserting that the predictable nature of energy from tides can complement the fluctuating energy from wind.

Given the potential of renewable energy sources, Marine energy has attracted mostly large scale utilities, energy agencies, and industrial companies making investments in the sector over the past years.

However there are challenges that need to be addressed to encourage research and innovation in this area. One of these areas is the EU power grid, and the concern that it will not cope with the added capacity as more projects near full-scale sea trials and supply electricity to the grid. Some utilities depend on significant investment in expansion of grid capacity before they will consider increasing their marine plans. Furthermore, there are legislative and regulatory challenges, due to varied technology and regulatory standards, and the lack of a comprehensive policy framework.

Some of the key drivers for the future success of the industry in the Atlantic area addressed by the Atlantic Action Plan therefore include:

- cross-border coordination and governance to put the right conditions in place to encourage and facilitate research and development activities,
- mobilizing the economic, technical and scientific capabilities of the region to confront challenges in a unified manner
- ensuring inter-connectivity (the European Electricity Grid) to move energy from where it is produced (Atlantic seaboard) to where it is needed (the urban and industrial centres of the EU).

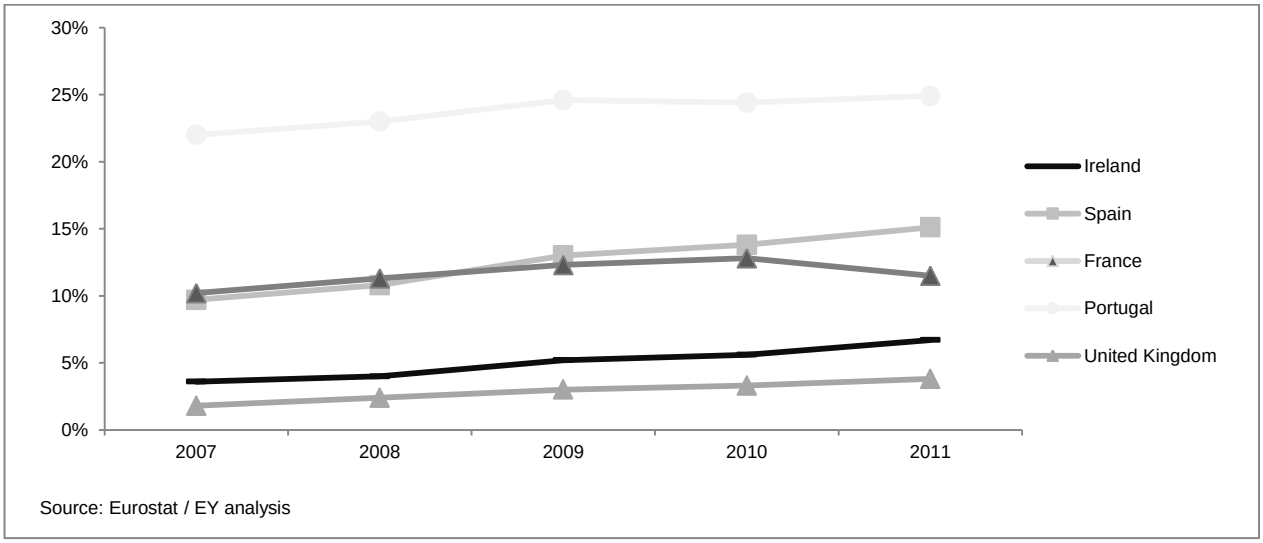
Baseline situation

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
17	**Share of energy from renewable sources**	% gross final energy consumption	Eurostat	2.4	Range: 4% - 25 % Average: 13%	2011
18	**Off-shore wind energy production capacities**	MW	EWEA	2.4	2 975 MW	2012
19	**Supply, transformation, consumption – renewables (hydro, wind, photovoltaic)**	Gigawatt hour	Eurostat	2.4	534 GWh	2011

Share of energy from renewable sources

In 2011, the last year for which data is available, the extent to which renewables are currently present in the energy mix of Atlantic Member States is uneven. Only Spain (15,1%) and Portugal (24,9%) indicate a share of renewables higher than the EU average (13%), while France is only slightly below this value (11,5%). On the other end, renewable energies are comparatively little developed in the UK (3,8%) and Ireland (6,7%). Recent policies to boost renewable energy have translated into a steady growth of their share in the overall energy consumption in the European Union, which has increased by 3.3 percentage points from 9,7% in 2007 to 13% in 2011, coming closer to the 20% target share stipulated by the Europe 2020 strategy. In the Atlantic area, the share of renewables increased the most in Spain over the 2007-2011 period (by 5 points), followed by Ireland and Portugal (+3 points). France and the UK saw this indicator rise the least over this period, by 1 percentage point and 2 percentage points respectively.

Figure 16 - Share of energy from renewable sources



Source: Eurostat / EY analysis

The Atlantic Ocean offers a vast potential for the generation of renewable energy, which could contribute to achieve a cleaner energy mix for the Member States and Europe, making Europe more independent on imports, and provide new investment, jobs and growth to Atlantic regions. According to the European ocean energy association, a production capacity of 3.6 GW could be installed by 2020 and by 2050 the ocean could be provide up to 188 GW, contributing to the potential creation of up to 471,320 direct and indirect jobs.[39] Achieving these ambitious targets will not be easy. As shown by the table below (data as of October 2011), most of the Atlantic Member states are only at the beginning of achieving the targets they set out in their National Renewable Energy Action plans for 2020. Here, the UK comes out as the forerunner, although with only 8.5% of the capacity target.

Atlantic Member State Offshore Renewable Energy targets in National Renewable Energy Action Plans[40]

MS	2020 target	Potential sea area	Offshore renewable energy area	Offshore Wind renewable	% of installed capacity vs 2020 target
UK	18 GW	773 676 km²	So far approx 49.2GWe of	1525 MW	8.5%

[39] European ocean energy association, 2011, *Oceans of energy. European Ocean Energy Roadmap 2010 - 2050*

[40] Seanergy 2020, October 2011, "Offshore Renewable Energy and Maritime Spatial Planning: Recommendations for Adaptation and Development of Existing and Potentially New International Marine Spatial Planning Instruments"

	UK target for 2020 as currently expressed by the Government is 18 GW by 2020		leases issued (39602 km²)		
Ireland	Wind: 550 MW Wave & Tidal: 75 MW	410 310 km²	6 areas identified for potential ORE deployment: 9800 to 12500 MW	25.2 MW Consented OWF: 1600 MW	4 %
France	6000 MW	AC & EC: 334 604 km² MS: no claimed EEZ	AC & EC: 533 km²	0 MW	0 %
Spain	3000 MW	AC: 683 236 km² MS: no claimed EEZ	Not delimited A zoning exercise identified potential areas in accordance to environmental restrictions	0	0 %
Portugal	Wind: 75 MW Wave & Tidal : 250 MW	1 714 800 km²	Wind: 1300 km² (fixed WT) + 16100 km² (floating WT) Wave&Tidal: 3800 km²	Wind: 0 MW Wave & Tidal: 0.4 MW	0 %

Off-shore wind energy production capacities

As shown in the table below, the United Kingdom has also a vast advance over other Atlantic member states in terms of offshore wind energy capacity connected to the electricity grid and accounted itself for over 59% of the EU's total production in 2012. The share of Ireland and Portugal was comparatively small, while there were no fully operational facilities in France and Spain.

Figure 17 - Total power generation capacity in offshore wind energy connected to the electricity grid (2012)

Country / Region	Installed production capacity (MW)
France	0
Ireland	25
Portugal	2
Spain	0
United Kingdom	2 948
Total : Atlantic area	2 975
European Union (27 countries)	4 993

Source: European Wind Energy Association, *The European offshore wind industry - key trends and statistics 2012,* January 2013.

Supply, transformation, consumption – renewables (hydro, wind, photovoltaic)

Many of the technologies that should provide a large bulk of the production capacities including tidal, marine current or wave are still at an experimental or prototype stage with unclear prospects for the effective connection to the electricity grid. According to Eurostat data, France was the only country in the European Union that reported in 2012 (most recent data available) a primary production in the category "Tide, Wave and Ocean" renewable energy with a production capacity of 534 GWh.[41]

[41] Eurostat, *Supply, transformation, consumption - renewables (hydro, wind, photovoltaic) - annual data* [nrg_1072a], updated on 26.06.13, downloaded on 19.12.2013.

5 Priority 3 – Improve accessibility and connectivity

The aim of priority three of the Action Plan is to improve accessibility of the Atlantic area through port development and increased cooperation between ports. Ports are fundamental in the blue economy as hubs of transportation and home to economic activities. The intention of the Action Plan is to facilitate the development of ports as hubs of the blue economy.

Shipping and ports have cornerstone functions in worldwide trade. More than 70 per cent of the European Union's external trade and 30 per cent of the internal trade is handled by maritime transport. Growth in European shipping - short sea cargo - results from two main drivers: economic development, but also a modal shift as short sea shipping is an alternative to road and rail-based transport. From a sustainability point of view, shipping is promoted as a means to reduced traffic emissions and congestion on land. Still, moving goods on sea rather than land also involves emissions of harmful substances, often close to densely populated areas.

In order to promote a modal shift of transportation towards shipping, links between ports must be well developed, barriers in the logistics sector overcome and port and hinterland infrastructure in place. It would be advisable to continuously to optimize infrastructure with a view to lowering costs and strengthening the competitive edge of shipping.

5.1 Promoting cooperation between ports

A large part of European shipping activity is centralised in a small number of mega-ports due to their proximity to major European production and consumption markets in the North West of Europe. Compared to the Atlantic, the maritime transport sector and ports are larger in the Mediterranean and the North Sea, and strategic cooperation between Atlantic Member States, regions, ports and businesses would be beneficial to overcome barriers, optimize infrastructure and promote blue growth. Nonetheless, Atlantic ports constitute an important part of goods handled in the EU, with 13,3% of short sea-shipping in 2010 passing through ports in the region and almost 17% of all goods handled in European ports[42].

The following indicators have been identified to be part of an evaluation of the Atlantic Action Plan on objective 3.1:

- **Maritime transport volume**
- **Short sea shipping volume**
- **Number of short sea shipping routes**
- **Number of cruise passenger**
- **Degree of completion of TEN-T hinterland intrastructure priority projects**

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
12	**Volume of short-sea shipping in the Atlantic area**	thousands of tonnes	Eurostat	3.1	11 M TEUs	2011
13	**Number of short sea routes**	Number	Marco Polo Programme	3.1	4 (established as part of Marco Polo Programme)	2014

[42] *COM(2006) 336 final, Freight Transport Logistics in Europe – the key to sustainable mobility, Brussels, 28.6.2006*

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
14	**Completion status of TEN-T infrastructure priority projects**	Percentage	TEN-T: Progess report – Implementation of the TEN-T Priority Projects	3.1	35 - 100%	2011
15	**Number of cruise passengers**	thousands of passangers	*CLIA*	3.1	1.3 million	2012
16	**Maritime transport of freight**	1000 tonnes	*Eurostat*	3.1	631 Mtonnes	2011

Baseline situation

Volume of short-sea shipping in the Atlantic area

The table below lists the major Atlantic ports in comparison to their European counterparts. Three ports in the Atlantic Member States rank amongst the 20 largest cargo ports (short and deep sea freight), and they are relatively small in comparison to the largest maritime hub in Europe, Rotterdam. Other significant Atlantic ports include Southampton, Nantes Saint-Nazaire, Sines and Rouen. Marine transportation is dominated by few major ports and shipping companies and a host of smaller ports and SMEs.

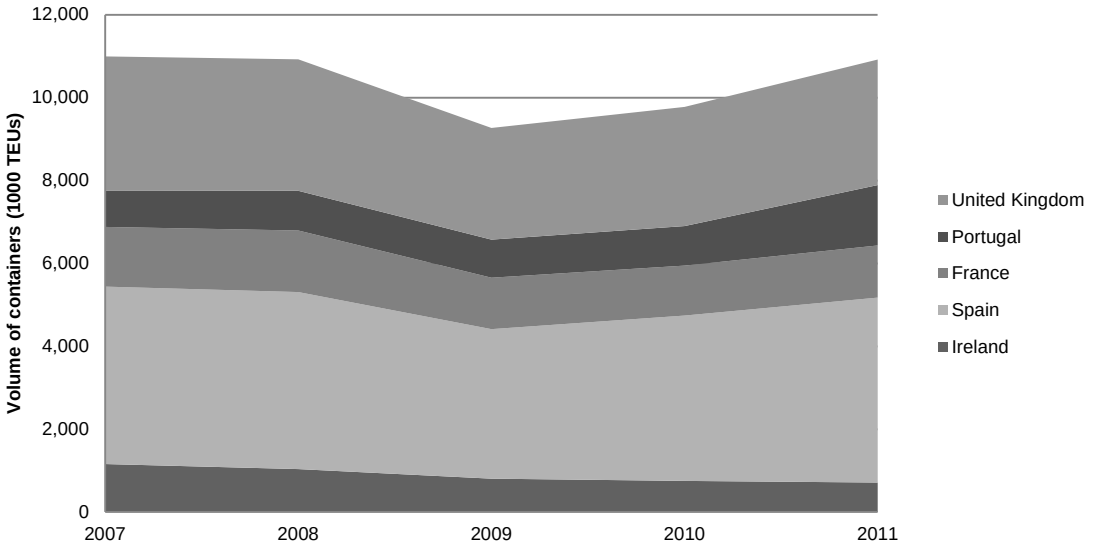
Overall however, short sea shipping in the Atlantic Member States has recovered to pre-crisis levels (**Error! eference source not found.**).

Table 2: Atlantic ports amongst the largest European ports in 2011; the freight they handle, their size compared to the largest European port - Rotterdam - and their ranking in terms of size

Atlantic port	Gross weight of goods, thousand tonnes, 2011	Size compared to Rotterdam	European rank in 2011	European rank in 2002
Le Havre, FR	63,383	17%	7	6
Milford Haven, UK	48,699	13%	15	18
Dunkerque, FR	40,841	11%	20	12
Southampton, UK	37,878	10%	21	19
Nantes Sainte-Nazaire, FR	29,935	8%	28	22
Sines, PT	24,871	7%	34	36
Rouen, FR	23,275	6%	37	38

Source: Eurostat

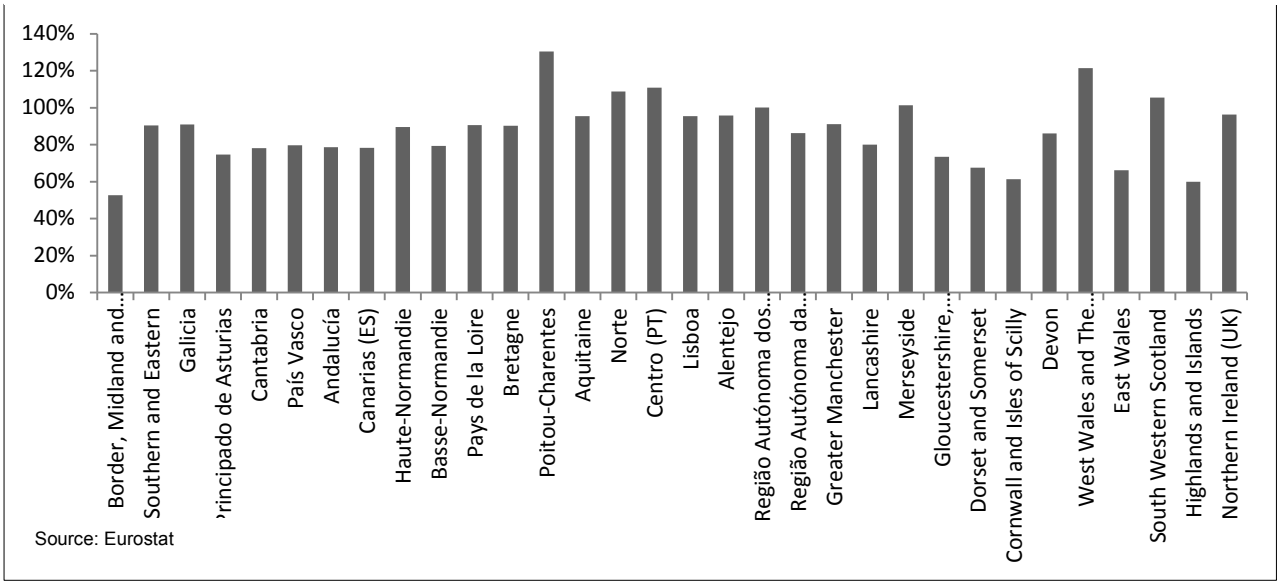
Figure 18. Shortsea shipping in Atlantic Member States.



Maritime transport of freight

Overall maritime freight in the Atlantic area has been declining at the course of the economic crises. Few regions are now above 2007 levels (bars above than 100 % in **Figure 18**).

Figure 19. Maritime freight in Atlantic Area – change from 2007 to 2011.



Number of short sea routes

The EU Marco Polo programme has funded sustainable freight focused at projects and actions that promote a shift in transport modes from road to ship and rail; this includes Motorways of the sea. An attempt to remove several billion tonnes of kilometres from the French road network was established by the Fresmos project between St. Nazaire in France and Gijon in Spain. The parallel Ro-Ro Past France project was set up as a seaborne motorway between Bilbao, Spain and Zeebrugge in Belgium where each sailing carries up to 200 unaccompanied trailers[43]. Together with the Gulf Stream (Santander, Spain to Poole, UK) and Reefer Express (Bilbao, Spain to Tilbury, UK and Rotterdam, Netherlands) projects, these routes are very likely to have increased interconnectivity among the Atlantic economies and moved great amounts of goods from land to sea transport modes.[44]

Completion status of TEN-T infrastructure priority projects

Hinterland infrastructure is for great importance for economic activity in the Atlantic regions in general and for ports specifically. The trans-European transport network (TEN-T) projects promote priority infrastructure corridors connecting Europe. The table below illustrates that Atlantic hinterland infrastructure under the TEN-T still is being completed.[45]

Table 3. Completion status of Atlantic TEN-T priority infrastructure projects

Project	Geography	TEN-T support, million €	Completed in 2011 (km)
High speed railway axis of southwest Europe	Connecting Paris, Bordeaux, Bilbao, Madrid, Lisbon, Porto etc.	696	>35%
High speed rail interoperability in the Iberian Peninsula	Connecting Santander, Gijon, La Coruña, Vigo, Porto etc.	64	>35%
Multimodal axis Portugal/Spain-rest of Europe	Connecting San Sebastian, La Coruña, Porto, Lisbon etc.	32	Rail: >60% Road: ~99%
Railway axis Cork-Dublin-Belfast-Stranraer	Connection Cork, Dublin and Belfast	-	100%
Road axis United Kingdom/Ireland/Benelux	Connection Cork, Dublin, Belfast, Stranraer, Birmingham, Harwich and others	95	~90%
West Coast Main Line	Connecting Glasgow, Edinburgh, Liverpool, Manchester, London	-	100%
Freight railway axis Sines/Algeciras-Madrid-Paris	Connecting Sines, Algeciras, Madrid and Paris	8	<60%

[43] "EEU support enhances credibility, Ro-Ro Past France". Link: http://ec.europa.eu/transport/marcopolo/files/success-stories/motorways_of_the_sea_ro_ro_past_france_en.pdf
[44] The Marco Polo programme is replaced initiatives under Horizon 2020's objectives on "smart, green and integrated transport" and the work programme "Mobility for Growth"
[45] Investments in the trans-European infrastructure in the 2014-2020 period will be financed under the Connecting Europe Facility (CEF)

Number of cruise passengers

Prioritized diversification of port activities include maintenance of offshore renewable energy installations and tourism. The first is dealt with under the Action Plan's priority 2.4. Regarding the latter, the Atlantic area is home to major cruise activities. Lisbon is the largest among the principal ports-of-call of cruise ships in the Atlantic and Baltic Sea shown. Also among the top 15 ports-of-call are the Atlantic ports in Cardiz, Vigo and Le Havre. The European-wide direct spending of the cruise ship industry amounts to € 15.5 billion, which includes some € 2.9, 1.3 and 1.1 billion in the UK, Spain and France, respectively.

Table 4. Major Atlantic ports-of-call for cruise ship passengers

Port	Cruise passengers, no., 2012
Lisbon, PT	522,604
Cadiz, ES	334,266
Vigo, ES	240,352
Le Havre, FR	212,825

Source: CLIA Europe (2013): The Cruise Industry – Contribution of Cruise Tourism to the Economies of Europe 2013 Edition.

In spite of large cruise and passenger services in Atlantic ports, sea and coastal passenger transport is a relatively modest employer compared to other economic sectors. However, the employment is concentrated in relatively few port cities which mean that employment within passenger transport is locally very important.

In 2011, the sector in the Atlantic UK employed 4,500 people, down from approximately 5,500 in 2009. In the same period, French employment went dropped from 3,200 to 2,800.

In Atlantic Spain the number of employed decreased from 1,100 to 1,000 between 2009 and 2011 whereas Portuguese employment stayed constant at around 600 people.

Sources: Unpublished data gathered under the MARNET project.

6 Priority 4 - Create a socially inclusive and sustainable model of regional development

Priority four deals with social inclusive and sustainable regional development, which it seeks to boost through improving the knowledge on social conditions and challenges in the Atlantic area and support to various types of tourism sites and activities in the Atlantic area.

The priority is divided into two specific priorities: fostering better knowledge of social challenges in the Atlantic area (Knowledge sharing and evaluation of social challenges) and preserving and promoting the Atlantic's culture heritage (maritime and coastal tourism).

6.1 Fostering better knowledge of social challenges in the Atlantic area

Coastal regions are undergoing significant demographic changes, shifts in purchasing power, and are experiencing a lack of skilled professionals. The sector needs to adjust its business models in order to address these changes, particularly though innovation and sustainable value propositions to transform the traditional maritime economic activities and overcome the challenges.

The on-going socio-economic changes in coastal regions can be characterized as a "double movement".[46] On one hand, the fisheries sector is experiencing shrinking stocks, new technologies are increasing harvesting efficiency, and expanding national and international fisheries management systems are changing the face of fisheries management. Furthermore, there is a trend towards increased aquaculture production, and a focus on more local, environmentally friendly, small scale fisheries adjusted to local needs.

On the other hand, the tourism sector is expanding, leading to situations where communities previously dependent on fisheries are changing their focus towards an emerging recreational potential for coastal tourism. These opportunities are typically based on the specific qualities of the local coastal region. At the same time these disappearing fisheries communities are providing attractive settings for short terms visitors and retirees seeking coastal housing.

The Atlantic area is a diverse region in many senses, encompassing both thriving, dynamic areas with good prospects for growth that attract young, highly educated migrants searching out new opportunities, and areas in chronic decline, economically, demographically and socially. And yet along the Atlantic coast, aspects of this "double movement" can be widely seen. Many communities need to cope with a decline in employment in fisheries and ship-building, a shift of mass tourism to sunnier climates, and the growing tendency for the elderly people to retire to coastal regions.[47] These challenges must be met through measures to assist in the restructuring of the labour and employment market, as well as through innovation to add value to fish products, diversification activities and the development of culture marine heritage

But knowledge and data enabling to analyse the existing situation and trends is crucial, too. Aggregate level statistics can provide a general idea of the region's population, economic activity and general well-being, but looking at key indicators on the sub-regional level (NUTS 2 and 3) uncovers the area's true diversity.

However, the real challenge lies in the ability to decode finer trends and topics, as well as statistics relevant to specific sectors (eg. number of workers in a precise sub-sector, turnover created; number of people having undergone sector-specific training,…). In the Atlantic area, often the issue is not only the availability of statistics and indicators, but also their comparability. Several projects in this area have been launched in the past financing period (such as MARNET).

[46] Holm, Petter (2001). The Invisible Revolution. The Construction of Institutional Change in the Fisheries, Norwegian College of Fishery Science, University of Tromsø, Tromsø.

[47] COM(2011) 782 final, "Developing a Maritime Strategy for the Atlantic Ocean Area", November 2011.

Key impact indicators for Priority 4

The following impact indicators have been identified to be part of an evaluation of the Atlantic Action Plan on priority 4:

- **Unemployment rate**
- **Employment rate**
- **Life expectancy at birth**

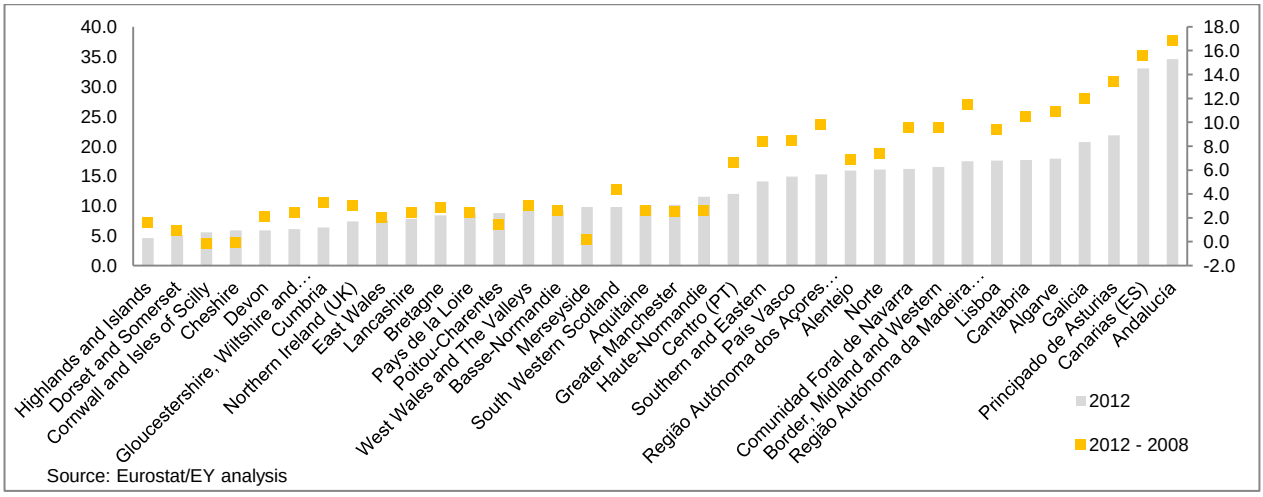
Number of indicator	Name of the indicator *(in yellow : indicators chosen for monitoring the AAP)*	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value
4	**Unemployment rate**	unemployment rate	*Eurostat*	PRIORITY 4: Create a socially inclusive and sustainable model of regional development	Range: 4,6% - 34,6% Average: 12,8%
5	**Employment rate**	% of population	*Eurostat*		Range: 46,4% - 75,5% Average: 63,9%
6	**Life expectancy at birth**	mean number of years	*Eurostat*		Range across Atlantic regions: 76,3 - 84 Average: 80,8

Unemployment rate

The average unemployment rate was 12,8% in the Atlantic area in the reference year 2012, or 2,8 points above the 10% average of all EU regions. Rates were lowest in the UK Atlantic regions with a range of 4,6-10,2%(the Highlands and Islands region having the lowest rate of all the 36 Atlantic regions: 4,6%). French Atlantic regions were also in majority below the EU average, with a range between 8,4-11,5%. Portuguese and Irish regions are had above-average rates of 12-17,9% and 14,1-16,5% respectivelly, although below the 20%. Finally, Spanish coastal regions were experiencing the highest unemployment rates, ranging from 14,9% to the highest of 33% in the Canarias and 34,6% in Andalucia.

Likewise, the 2008-2012 evolution in the Atlantic area mirrored the unemployment rates. The lowest rise or actual decrease in unemployment in the UK, a moderate rise in France (by 1,4-2,6%). The most significant rises of unemployment rates were recorded in the Atlantic regions of Ireland (by 8,4-9,5%), Portugal (by 7,4-11,5%) and Spanish (by 8,5-16,8%).

Figure 20 - Unemployment rates (%) by NUTS 2 region

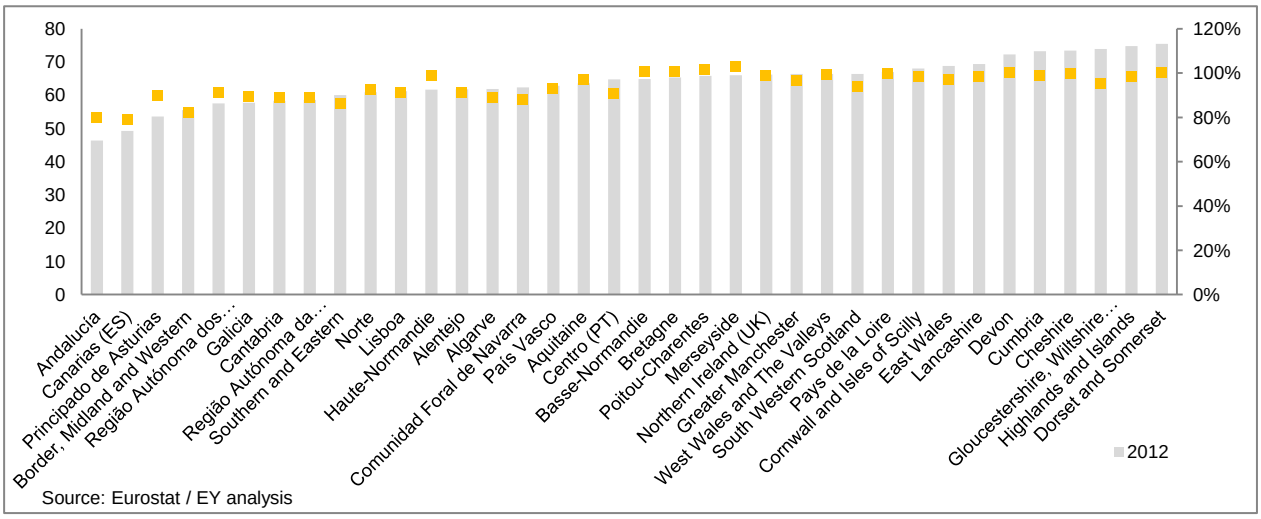


Employment rate

To complete the picture, it is also worth examining the share of the working population, it is also worth examining the actual share of population in work, via the employment rate. In the reference year 2012, the average level of employment in the productive age category 15 – 64 years Atlantic area (63,9%) was slightly above the average of the Eurozone (63,7%)[48]. The range however was very broad. The economic crisis had its worst effect in Spain, where the level of employment was the lowest of all 5 countries, including the two regions in the Atlantic area with the lowest employment rate – Andalucia (46,4%) and Canarias (49,3%). On the other end of the range, all UK regions were above the average, with values up to 75,5% (in Dorset and Somerset).

Over the last 5 recorded years (2007 - 2012), the level of employment actually decreased in the Atlantic area by 6% from 67,82% to 63,93%. The Canaries (-13 points) and Andulacia (-12 points) as well as the Irish regions Border, Midland and Western (-12 points) and Southern and Eastern (-9,7 points) experienced the largest decrease in the level of employment over the period 2007-2012. Only five regions in Europe experienced a slight uptake of their employment levels over the same period: the three French regions Basse Normandie, Bretagne and Poitou-Charentes (0,4 pts, 0,5 pts and 1 pt respectivelly) and another two regions in the United Kingdom (Dorset and Somerset +0,2 pts; Merseyside with +1,7 pts).

Figure 21 - Employment rate by NUTS 2 region (age group 15-64)



Source: Eurostat / EY analysis

Life-expectancy at birth

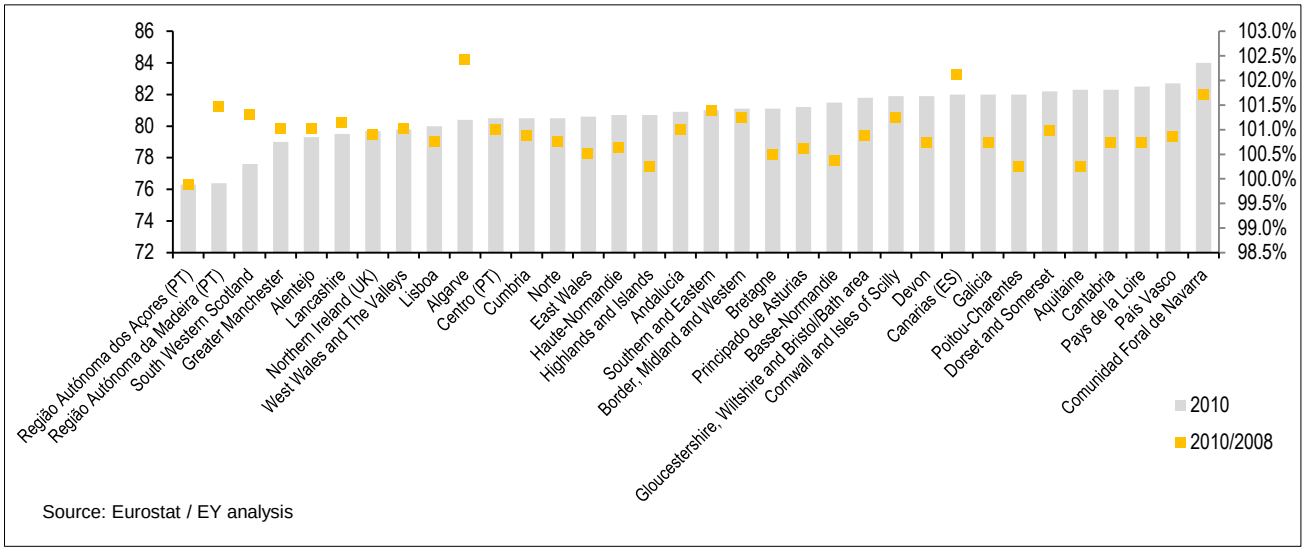
The average life expectancy of individuals of less than one year old was 80,4 years in the Atlantic area in the reference year 2010, slightly higher than the EU 27 life expectancy at birth of 78,82 years. In terms of tendencies, the life expectancy slowly is increasing in the region.

Among the ten regions with the lowest expectancy, four are in Portugal regions and six from the UK. On the other hand the ten regions with the highest life expectancy are six regions from Spain, three regions from France and two regions from the UK.

In terms of evolution, the life expectancy increased over the 2008-2010 period in the Atlantic area. All but one region experienced a growth as shown in the graph below. Globaly the evolution of the life expectancy in the Atlantic area was limited to 0,92 point.

[48] The Labor Force Survey data available via Eurostat indicates only a general value for the Eurozone, not for the EU as a whole.

Figure 22 - Life expectancy of individuals less than 1 year old



Source: Eurostat / EY analysis

6.2 Preserving and promoting the Atlantic's cultural heritage

Specific objective 4.2 and the four underlying operational objectives deal with coastal tourism and maritime heritage, the two being closely interlinked.

At a European level, the tourism industry has become a sector of major importance in the economy as a whole. Europe is the most frequently visited region in the world: according to the UNWTO, about half of the international tourist arrivals in 2011 were in Europe (503,9 million visitors in 2011)[49].

Because of the presence of the oceans, seas and the natural environment, coastal zones have an important tourism function. Furthermore, tourism is a relatively labour intensive sector, meaning that there is a high ratio of growth to job creation. The Atlantic's rough natural beauty, rich biodiversity, traditional seafood cuisine and Celtic culture are assets that can be readily exploited.

Figure 4.2.1: Key maritime tourism activities based on size (2008 or latest available year), recent growth (average annual GDP growth last 5 available years) and potential (ranking 1-6 with 6 highest), source: Blue Growth Final Report

Maritime economic activity	Size today (EUR billion)	Recent growth	Future potential
Coastal tourism & yachting	144	3 - 5 %	4
Cruise tourism	14,1	12,30%	5

Coastal tourism is a mature economic activity and a core ingredient for Blue Growth. It is an industry that employs over 2 million people in Europe and provides a mainstay to many local economies. In addition to this, there are another quarter of a million are in yachting and marinas, while cruise tourism employs 150 000 jobs and generates a direct turnover of 14.5 billion euro.[50] Despite being a mature sector, coastal and maritime tourism still carries significant economic potential, and is expected to grow by 2 to 3% by 2020[51].

More than a third of the value of the maritime sector in the North-East Atlantic is generated by coastal tourism and shipping, with tourism and the fishing industry being the largest employers.[52] In France, Portugal and Spain coastal tourism is the largest employer of the maritime industries. Coastal tourism will remain an important source of income for local communities, creating jobs due to the important amounts of money that coastal tourism attracts. The added value of coastline tourism, yachting and marinas and cruise tourism in Europe in 2011 is estimated at €158,5 million[53].

[49] UNWTO

[50] Blue Growth, Final Report Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, 13 August 2012

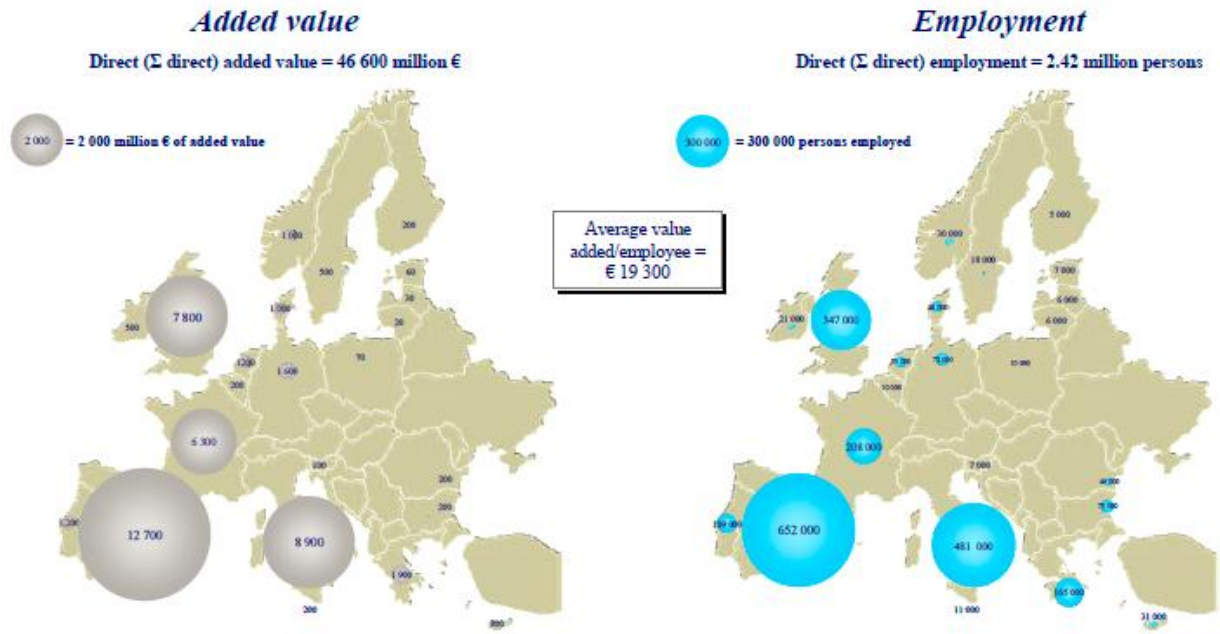
[51] Speech by Maria Damanaki, "Maritime and Coastal Tourism: The Way Ahead", http://ec.europa.eu/commission_2010-2014/damanaki/headlines/speeches/2012/09/20120927_ speech_en.htm

[52] Blue Growth, Final Report, Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, 13 August 2012

[53] Blue Growth, Final Report, Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, 13 August 2012

The figure below shows the importance of coastal and marine tourism from a study undertaken in 2008[54], which shows particularly the prominence of the Atlantic Member States. The 5 Atlantic Member States represent €28.5 billion (61.1%) in added value out of a total of €46.6 billion, and 1.33 million (55%) out of the 2.42 million employed in the sector in Europe. These figures confirm the important role of the Atlantic Region in coastal and marine tourism in Europe.

Figure 4.2.2: Added value and employment for Coastal and Marine Tourism in the EU and Norway, source: Policy Research Corporation, cited in "The role of Maritime Clusters to enhance the strength and development of European maritime sectors", a reported commissioned by DG MARE in 2008



One of the key messages in the Maritime Policy Green Paper of 2006[55] was the importance of protecting maritime heritage and increasing public awareness. It was also noted that the various maritime sectors should cooperate to raise public awareness of maritime heritage and the role that oceans and seas have in all our lives. The Commission suggested using education as a channel for action, arguing a more positive image would make it easier to recruit seafarers.

Over the past years, a number of projects and initiatives have been introduced through various European instruments in order to highlight the importance of traditional maritime activities, and improve the image of the sector. An example of one of these initiatives is the DORNA project, presented below, that focuses on the valorisation of marine cultural heritage in the Atlantic region.

The following indicators have been identified to be part of an evaluation of the Atlantic Action Plan on priority 4, specific objective 2:

- **Nights spent at tourist accommodation establishments by NUTS 2 regions**
- **Increase in expected number of visits to supported sites of cultural and natural heritage and attractions**

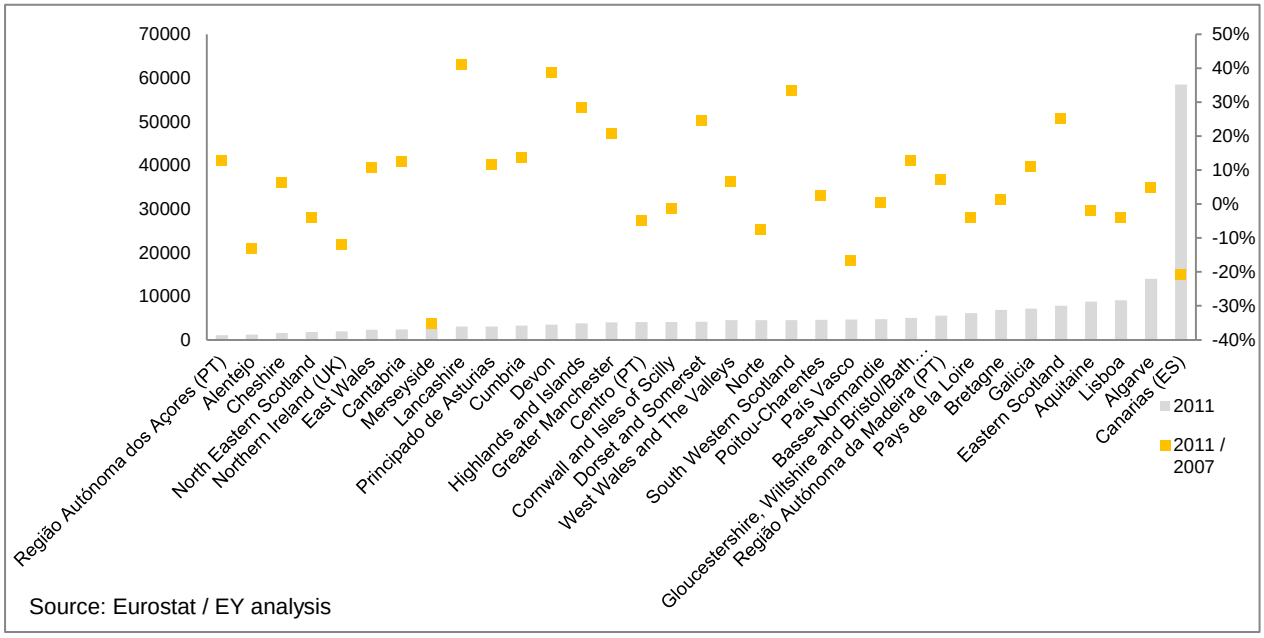
[54] Policy Research Corporation, "The role of Maritime Clusters to enhance the strength and development of European maritime sectors", a reported commissioned by DG MARE in 2008
[55] COM/2006/0275, Green Paper - Towards a future Maritime Policy for the Union : a European vision for the oceans and seas - "How inappropriate to call this planet Earth when it is quite clearly Ocean"

Baseline situation

The following assessment of the baseline situation for the Atlantic region is based only the first indicator only, since data for the second is only to be collected by the ERDF monitoring system in the upcoming period.

Number of indicator	Name of the indicator	Unit	*Potential source (provider)*	Related AAP priority / specific objective	Baseline value	Reference year
27	**Nights spent at tourist accommodation establishments in coastal regions**	number of nights	Eurostat	4.2 / 1.3	203 971 592	2011
28	**Increase in expected number of visits to supported sites of cultural and natural heritage and attractions**	visits/year	DG REGIO	4.2 / 1.3	N/A	N/A

Figure 23 - Nights spent at tourist accommodation establishments in coastal regions



Source: Eurostat / EY analysis

Despite the importance of tourism for the Atlantic economy, the number of nights spent in tourist accommodation facilities in the Atlantic area accounted with 203,971,592 nights for only about 2.6% of the whole European Union (27 member states) in 2011. The Spanish Canarias were the most successful region, accounting with 58,5 million nights for a share 28,6% in the Atlantic area in 2011. In absolute terms, the Spanish regions were among the more successful ones in the Atlantic area. Their, the frequentation of hotels ranged from 2,4 million nights spent in Cantabria to the Canarias 58,5 million nights. French regions were able to draw also a significant part of nights spent, ranging from 4,6 million nights in Poitou Charentes to Aquitaine's 8,8 million nights, the third most successful region of the Atlantic area (share of 4,3%). On the contrary, regions within the UK accounted in general for lower numbers of nights spent in tourist accommodation establishments – between 1,5 million in Cheshire to 5 million in Cloucestershire, Wiltshire and Bristol.

The performance of Portuguese regions was mixed, ranging from 1,0 million nights in the Açores (the lowest number among all Atlantic regions) to Algarve, being with 13,9 million nights the Atlantic area's second most successful region (7% share). No data was available for the 2 Irish regions.

A comparative analysis of the evolution of this indicator from the beginning of the last financing period (2007) to the reference year 2011 indicates the growing attractiveness of several regions, some of which had been below their potential previously. As a matter of fact, the UK regions South Western Scotland, Devon and Lancashire recorded the strongest increase in the number of nights spent at tourist accommodation establishments in all of the Atlantic area, with growth rates of 33%, 39% and 41% over 4 years respectively. Yet, the UK region of Merseyside recorded the largest decline over the period with -35% nights. In French regions, the numbers remained almost stable, with growth rates ranging from -4% to +3%.

Evolutions of Spanish and Portuguese regions give a more contrasted picture. Whilst in absolute terms the unrivaled leader of the Atlantic area for this indicator, the Canarias lost over the 4-years period 21%; the second highest decrease in the Atlantic area. For the Basque region (Pais Vasco), the indicator declined by 17%, the third most significant drop. On the other hand, in Galicia, Asturias and Cantabria the number of nights spent in accommodation facilities increased by 11%, 12% and 13% respectively. Portuguese regions also experienced an uneven evolution. The Acores increased the number of nights spent by 13% over four years and a positive tendency of +7% could be observed for Madeira. At the same, the frequentation of tourist accommodation facilities declined by 13% in the Alentejo region, by 8% in the Norte Region, by 5% in the Centro region.

Annex: Key projects

This annex presents examples of projects financed by European funds in the Atlantic area in the past programming period (2007-2013; as agreed jointly with the DG MARE only projects implemented in 2009 or later were considered to provide an up-to-date picture) with a relevance to the priorities and objectives of the Atlantic Action Plan. In other words, they can be read as types and examples of projects that would have supported achieving the targets of the Atlantic Action Plan, had it previously existed.

This overview is organized by specific and operational objectives. Each section is introduced by a brief summary of the kinds of projects and main sources of funding per specific objective.

A list of up to 3 examples of projects is given per operational objective with a brief description for each project including information on its aims, last status, project partners and volume of financing. A link to the website of the project is also provided (if still operational in April 2014), or a link to another document (e.g. success story profiles on EU funds websites) which served as source for the description of the project. In some cases, no example of project could be identified.

Specific objective 1.1: Sharing knowledge between higher education organisations, companies and research centres

A vast variety of projects on networking, cooperation initiatives and assessment studies were implemented in the Atlantic area and financed by EU funding between 2007 and 2013. Major funding instruments for these projects were the FP7 and ERDF,

In general, these projects aimed either on allowing the transmission of knowledge between countries and entities or for the development of a specific sector at the interregional level.

1.1.A networking and co-operative research between research centres, higher education and business in the Member States

The **EuroVIP (European Virtual Integrated Partnering)** project aims to co-ordinate European maritime SMEs, associations, larger companies, and research institutions in the European maritime sector.

The project is supported by 20 partners of the 11 countries involved, such as universities, business organizations or consultants.

The collaboration between European maritime sector's stakeholders passes through the exchange of industrial and research innovations. The best collaborative practice will be identified and spread to enhance and facilitate partnerships.

Thanks to this project, a draft operational collaboration model was developed explaining and illustrating infrastructure, management structure and operational processes of exchange of industrial and research innovations. Furthermore, in the first year, 30 technical collaboration requirements were collected and prioritized.

The EuroVIP project has a total budget of 1,6 Meuro, with a maximum EU contribution of 1,2 Meuro under the FP7.

The project was operating from 2011 to 2014.

Link: http://cordis.europa.eu/projects/rcn/99159_en.html

The **EMAR2RES** project supports action to initiate and enhance cooperation between two communities: the Communities of European MARine and MARitime Research and Science.

The project is supported by 5 partners of the 3 countries involved (Belgium, France and Netherlands), such

as the European Foundation for Sciences (France), the European Council for Maritime applied R&D Association (Belgium) and a European Association of Universities in Marine Technology and Related Sciences (Netherlands).

The aim of this project is to define, identify and generate a framework of collaborative practices for the two communities. The first identification was focused on the areas of common interest, of possible synergies and the most efficient cooperation structure.

One of the major results was an agreement on four common areas of research: biological and chemical impacts of maritime transport on the marine environment; water as a common medium; monitoring climate change and the benefits of operational oceanography to maritime activities; and the relationship between maritime transport and climate change.

The benefits of the results were more important than expected, since Emar2res was able to communicate concrete recommendations to policymakers and regulators.

Emar2res had a total budget of 536 045 euro, with a maximum EU contribution of 498 085 euro under the FP7.

The project was operating from 2009 to 2012.

Link: http://cordis.europa.eu/projects/rcn/92600_en.html

ENERMAT.aa was a project whose goal was to implement a sustainable transnational network of cooperation between public research structures and small and medium industries of the Atlantic Area in the materials for energy field.

ENERMAT.aa was centered on seven public research institutes, which constituted its main operational partners (CNRS, ENSICAEN, Institut Polytechnique de Bordeaux, University of Liverpool, Universidad de Santiago de Compostela, Universidade de Aveiro, Université de Bordeaux 1).These seven operational partners provided access to the networks of institutional and industrial partners developed by their valorization and technology transfer offices.

ENERMAT.aa had a budget of 2.5 million euros, with a grant of 1.6 million euros from the European Regional Development Fund (ERDF) (65% of the global budget).

The project was implemented in 2009-2012.

Link: http://www.enermat.eu/site/index.php?page=objectives&lang=en

NETALGAE was a project aiming to create a European network of relevant stakeholders within the marine macroalgae sector. The goal was to compile information from different regions to produce a study of existing practice within the macroalgae industry and establish a best practice model as well as suggested policies for the successful, sustainable commercial utilization of marine macroalgae resources.

The NETALGAE project was a success and led to the publication of reports analysing the seaweed industry in Europe and providing guidelines and best practices for the management of this industry.

NETALGAE was coordinated by 10 partners, mainly research centres and universities in Ireland, United-Kingdom, France, Portugal and Norway.

NETALGAE had a budget of 2.16 million euros, with a grant of 1.4 million euros from the European Regional Development Fund (ERDF).

The project was implemented in from 2010-2012.

Link: http://www.netalgae.eu/index-en.php

KNetworks studied the conditions and requirements for the creation of the European Knowledge Centre in the Atlantic Area. This initiative was an open network based in the Atlantic area with a main interest in the fields of: e-government, innovation, knowledge transfer, technology, the Internet, collective intelligence, future and the creation of knowledge.

KNetworks was coordinated by the following partners: Centro de Gestão da Rede Informática do Governo, Fundación Universidad da Coruña, Universidad de Cantabria , Université de Toulouse II, The Chancellor, Masters and Scholars of the University of Oxford and Cardiff University.

KNetworks had a budget of 1.84 million euros, with a grant of 1.19 million euros from the European Regional Development Fund (ERDF).

The project was implemented in 2010-2012.

Link: http://grou.ps/knetworks

SHIPWELD project focused on designing a monitoring technique aiming to perform a good quality welding joint on a typical application in the ship building industry with a fully automatic welding system unit.

The project was coordinated by six partners (universities, research centers and businesses) in Spain, Portugal, France and in the United-Kingdom.

SHIPWELD had a budget of 1.6 million euros, with a grant of 1 million euros from the European Regional Development Fund (ERDF).

The project was implemented in 2010-2012.

Link: http://atlanticprojects.ccdr-n.pt/project-area/shipweld/project_view?page=Project%20details

1.1.B transferring knowledge and insights, as well as skills between higher education, business and research, including through regional, national and cross-border maritime clusters and technology platforms

The **ATLANT-KIS** project was intended to propose the development of knowledge intensive services (KIS) enabling policies, in order to bridge the gaps between the demand and supply of such services at the regional and transregional level, and to promote their interaction and networking across the Atlantic Area.

ATLANT-KIS was a success and resulted in the publication of reports on KIS demand and supply as well as on the good practices, networking and presentation conferences were also organized during the life of the project and a platform of exchange was developed and launched.

The project was coordinated by Govierno de Navarra in Spain and involved 7 Partners across Europe.

ATLANT-KIS had a budget of 2.36 million euros, with a grant of 1.5 million euros from the European Regional Development Fund (ERDF).

The project was operating from 2009 to 2011.

Link: http://www.atlantkis.eu/en/

ShareBiotech was a project that aimed at strengthening the biotechnology sector in the Atlantic Area, through facilitating access to and structuring of TCFs, capitalizing on the regions' niches of excellence particularly in agro and marine sciences and supporting an active entrepreneurial biotechnological landscape in a positive policy environment.

During the life of the project 16 technology core facilities benefited from tailor-made support in order to improve their service offer, an analysis of the economic structure of technology core facilities was realized, study trips and conferences were organized and studies were conducted on the technological landscape and on LIMS.

The project was led by a French organization and included 10 partners from 4 Member States (France, Ireland, Portugal and Spain).

ShareBiotech had a budget of 2.7 million euros, with a grant of 1.5 million euros from the European Regional Development Fund (ERDF).

The project was implemented between 2010 and 2012.

Link: http://www.sharebiotech.net/

Seafare has brought together applied R&D centres, aquaculture industry organisations and environmental agencies across the region, in an effort to promote the sustainable expansion of European aquaculture The initiative sought to provide models for profitable expansion of the aquaculture sector that could be integrated with sustainable management of coastal ecosystems.

The project was able to provide tools to SMEs and public authorities to help them implement sustainable and environmentally friendly aquaculture practices.

The project had 5 partners and 9 associated partners from the Atlantic Region, and was coordinated by Bangor University (UK).

Seafare had a budget of 3.18 million euros, with a grant of 2.06 million euros from the European Regional Development Fund (ERDF).

The project was implemented between 2010 and 2012.

Link: http://www.seafareproject.eu/

Specific objective 1.2: Enhancement of competitiveness and innovation capacities in the maritime economy of the Atlantic area

Different types of projects aiming at enhancing the competitiveness and innovation capacities in the maritime economy of the Atlantic area were co-financed by the EU in the 2007-2013 period. The projects included networking, harmonization of syllabi, communication and exchange programmes.

The exchange and harmonization were mainly funded by the European Commission Lifelong Learning Programme or the European Socrates Erasmus Programme. But a project of communication and networking project for raising the knowledge level of the sector's human resources was funded from the FP 7 (7^{th} Framework Programme for research and technological development).

From a general perspective, these projects aimed at harmonizing the requirements for working in the maritime industry or at attracting new or training incumbent maritime professionals.

1.2.A Putting in place educational and training measures, including cross-border programmes and mutual recognition of national education and training programmes;

AQUA-TNET is a multidisciplinary Thematic Network that unite the academic and vocational aspects of the Bologna reforms and the establishment of the European Higher Education Area in the field of Aquaculture, Fisheries and Aquatic Resources Management.

Set up in 1996 as a tightly-knit collaboration of university departments and research institutes, Aqua-tnet's ground-breaking work in educational reforms led to a steady expansion and by 2005 it had become the largest multidisciplinary European Education Network in the field of aquaculture, fisheries and aquatic resources management.

The network brings together 109 partners, representing universities, training organisations, associations and research performers working in aquaculture, fisheries and aquatic resource management.

The 2005-2008 programme was funded under the European Commission Socrates Erasmus programme. For 2011 to 2014 the network is funded under the European Commission Lifelong Learning Programme.

Link: http://www.aquatnet.com/

GETAFIX (Gaining Educational Training Analysis For Identifying Cross Border Systems) investigates skippers qualifications within the Small Commercial Vessel (SCV) maritime sector of the EU. The qualifications of one Member State are not recognized by authorities of other Member States, each of which runs a different syllabus with different standards, regulations and proficiency levels. Because professional/commercial qualifications are not universally accepted throughout the Member States, restrictions are placed on qualified personnel, both trainers and workers/ trainees, resulting in a significant labour mobility problem.

The project resulted in a tool allowing to compare the qualification of skippers qualification.

The partnership brings together eight partners who are a mix of educational practitioners, institutions, SME's and non for profit organizations from six European countries.

The partnership is carried out with financial support of the Lifelong Learning Programme, Leonardo da Vinci, Partnerships.

Link: http://www.getafix.eu/

TRECVET (Transactional Recognition of European Certification in Vocational Education and Training) The project aimed to develop software methods to make transparent syllabi comparisons. This was achieved by breaking down syllabi into their most fundamental elements and then presenting these so that meaningful information on commonalities, differences and country specific requirements could be identified. By this technique, qualifications and learning outcomes became transparent and comparable.

The project was coordinated by five partners (companies and schools engaging in vocational training) in Spain, the United-Kingdom, Germany and Poland.

TRECVET received a budget of 400,000 euros funded by the Leonardo Lifelong Learning Programme

The project was operating from 2011-2013.

Link: https://www.trecvet.eu/

The **UNIMET** (Unification of Marine Education and Training) project aimed to ensure that standards were met in the administration of maritime education and training (MET) programmes. To do so the project used existing networks, and applied the partnership's extensive knowledge and experience of MET institutions.

The project led to the publication of articles and research papers on Maritime education and training.

The project was coordinated by 9 partners (education and training institutions) and concerned all of the European Union.

TRECVET has a budget of 400,000 euros funded by the Leonardo Lifelong Learning Programme

The project was operating from 2010-2012.

Link: http://www.unimet.pro/

1.2.B Raising awareness of sea-related careers, generating an enthusiasm for maritime culture and careers among young people and addressing other barriers that discourage young people from embarking on a maritime career (see The Task Force on Maritime Employment and Competitiveness); for example through sail-training, advanced technology courses and other joint Atlantic initiatives

The **KNOW-ME project** addresses the growing shortage of maritime professionals, especially qualified merchant marine officers, which is impacting on the significant risk of decreased competitiveness of the European maritime industry in general. The project seeks to create a maritime industry knowledge network for raising the knowledge level of the sector's human resources and improving its image and marketability among key decision-makers, the labour market, and the public.

The project has developed free online courses, an e-portal for young professionals (career, living at sea, good practices, etc.) as well as a mapping of the industry.

The project regroups a total of 11 partners (10 research institutions and 1 SME consultancy) from 6 European countries (The United-Kingdom, Germany, Sweden, Belgium, Greece and Norway).

The project was financed under the FP 7 work programme and benefited from a total budget of 1.5 million euros.

The project started operating in 2011 and will end in 2014.

Link: http://www.know-me.org/

The Vasco da Gama pilot scheme aimed to provide a clearer picture of the range of European training programmes on offer. The ultimate objective was that the project could be translated into a transnational mobility instrument from 2014, essential for developing the attractiveness of maritime careers for young people.
The study resulted in the launching of an exchange programme of its own right in 2014.

The project was led by ten regions including the Atlantic regions of Haute-Normandie (France), Basse-Normandie (France), Brittany (France), Cantabria (Spain), and Asturias (Spain).

Link: http://news.cpmr.org/cpmr-news/maritime-cpmr/the-project-vasco-da-gama-is-launched/

Specific objective 1.3: Fostering adaptation and diversification of economic activities by promoting the potential of the Atlantic area

During the 2007-2013 period, the EU co-financed different projects aiming at fostering adaptation and diversification of economic activities by promoting the potential of the Atlantic area. Those projects included research and development for new fisheries and aquaculture techniques, creation of databases and diffusion of best practices and methods for improving the management of the sea resources.

The projects aiming at discovering new fisheries and aquaculture techniques as well as constituting databases were financed by the 7th Framework Programme for research and technological development. The ERDF financed projects aiming at improving the management of resources and at constituting databases. The LIFE programme also contributed to the funding of a project aiming a preserving the maritime ecosystem.

The projects main goals were to improve the means of production, to preserve the ecosystems and to improve the fish traceability as well as the knowledge of the resources.

1.3.A Developing improved multi-species modelling, fishing gear and related techniques and technologies so as to minimise carbon footprint, seabed damage, discards and by-catch

Deepfishman addressed all aspects of deep-water fisheries. These included finding appropriate assessment methods, establishing harvest control rules and undertaking biodiversity and socio-economic studies. The bioeconomic impacts of newly introduced management strategy options were also examined for selected fisheries.

During the life of the project nine 'case studies' were selected that reflected the different types of deep-water fishery found in the North East Atlantic. For each case study, current problems with assessment or management were identified and new methods developed and tested. Recommendations for future methods and bioeconomic approaches were then made. Deepfishman also integrated data and knowledge from stakeholders to both improve the understanding of stocks and ecosystems and fill the gap between science, policy and stakeholders. Methodologies developed in Deepfishman have been made available to agencies in charge of fisheries resources and ecosystem assessment and management.

Deepfishman was coordinated by the Institut Français de Recherche pour L'exploitation de la Mer (Ifremer), and comprised a consortium of 13 partners from 9 countries, namely France, Greece, Iceland, Ireland, Namibia, Norway, Portugal, Spain and the United Kingdom.

Deepfishman had a budget of nearly 3 million euros under the seventh research programme (FP7)

The project was implemented from 2009 to 2012.

Link: http://wwz.ifremer.fr/deepfishman

1.3.B Sharing information on tools that improve fisheries managers' understanding of the socio-economic and ecosystem impacts of management measures

PISCES looked at methods to promote ecosystem-based approaches to the management of the Celtic Sea. The aim was to provide by 2012 a set of guidelines for delivering an ecosystem-approach to marine management for the Celtic Sea, enabling to ensure the continuity of activities without jeopardising marine wildlife.

The guidelines drafted during the workshops were endorsed by stakeholders as a representation of their commitment to sustainable cross-sectoral management through the ecosystem approach. A final evaluation survey showed that 92% of the stakeholders surveyed found the guidelines to be useful; 85% felt PISCES made it easier to talk about the ecosystem approach; and 89% felt more comfortable talking with others about how it fits within the MSFD.

The four organizations partnering on the PISCES project were SeaWeb, WWF, the Coastal and Marine Resources Centre at the University College Cork and The Environment Council.

PISCES had a budget of 2.1 million euros with a contribution of about 1 million euros from the LIFE programme.

The project was implemented in 2009-2012.

Link: http://www.projectpisces.eu/

The **MEFEPO** project aimed to show how ecosystem-based fisheries management could be introduced to Europe. The project was based on the extensive research which had already been conducted by national governments and the European Union. The project was primarily focusing on showing how the different strands of information used in management (ecology, economics and social sciences) could be brought together into an integrated governance system.

The project has developed a new reporting framework to align the information on the ecological, social and economic features. A set of operational environmental objectives for fisheries management was developed based on commitments under the Marine Strategy Framework Directive (MSFD) and the project provided the first attempt to assess the impacts of fishing on multiple environmental objectives across large marine regions.

The project coordinator was the School of Environmental Sciences (University of Liverpool) and 9 universities and research centers from France, Spain, UK, Denmark, Ireland, Norway and the Netherlands were involved.

MEFEPO had a budget of 4.1 million euros with a contribution of 3 million euros from the FP7.

The project was implemented in 2008-2011.

Link: http://www.liv.ac.uk/mefepo/

1.3.C Carrying out research to improve the growth, productivity, competitiveness and environmental sustainability of aquaculture (including offshore aquaculture) and the industry's ability to respond to market needs

PRESPO aimed to collect a set of scientific information in order to improve the artisanal fisheries management, and to increase their sustainability in biological, environmental, social and economic terms.

The project resulted in the publication of manuals, articles and reports as well as the organisation of conferences and seminars.

The partnership PRESPO is constituted by 11 partners (2 Portuguese, 6 Spanish and 3 French) and 6 associates partners (4 French and 2 Spanish, all regional authorities)

PRESPO had a budget of 3.67 million euros with a contribution of 2.38 million euros from ERDF.

The project was implemented in 2009-2011.

Link: http://www.coop-atlantico.com/marine-economy-conference-dublin-2012/integrated-coastal-fisheries-management-prespo

MUSSELSALIVE aimed at developing best practices and new technology for grading, handling, transporting, conditioning and storing of mussels. The goal is to keep mussels alive through the trade chain.

The project resulted in the production of fact sheets, leaflets, user manuals and videos to present the conclusion to the actors of the European mussel sector.

The partnership PRESPO is constituted by 11 partners (2 Portuguese, 6 Spanish and 3 French) and 6 associates partners (4 French and 2 Spanish, all regional authorities)

MUSSELSALIVE had a budget of 3.4 million euros with a contribution of 1.8 million euros from the FP7.
The project was implemented in 2010-2013.

Link: http://www.musselsaliveproject.com/

ClosedFishCage focused on the development of a closed, escape proof, constant volume, sea-based cage for fish farming. Among the project's innovative elements were a highly durable and flexible polymer plastic net pen, a predator guard, a control system, easy set-up and replacement of damaged cage parts.

The cost savings generated by the use of this cage were estimated at up to €25.000 per installation due to the fact that open net sea cages have no need for chemical-based cleaning methods. Moreover, thousands of tonnes of organic waste could be re-used for the production of biogas.

The consortium is coordinated by Norwegian company, Plastsveis and is supported by specialist maritime companies and non for profit institutions in Norway, Italy, Denmark and Spain.

ClosedFishCage had a budget of 1.4 million euros with a contribution of 1.1 million euros from the FP7.

The project was implemented in 2009-2011.

Link: http://www.closedfishcage.com/

1.3.D Improving the market position of EU-sourced fisheries and aquaculture products by improving processing, labelling, traceability and certification

LABELFISH is a project aiming at creating a network of laboratories and national control bodies with experience and interest in the development of a common strategy and the use of harmonization of analytical techniques for the control of traceability and genetic labelling of marine products sold in the European market and in particular in the countries involved in the project.
This overall objective has as specific purposes, the development of a new database meeting existing DNA genetic data and the selection and analytical tools validated for the identification of commercial fish species importance in selected regions of the AA.

The database constituted will be used for determining species, populations and probable origin of the selected fish groups. This capability will serve as a tool to support European Union policies regarding conservation, anti-fraud and consumer protection.

The project is coordinated by the Instituto de Investigaciones Marinas, from CSIC in Spain and regroups project partners (research centres and public agencies) in Portugal, France, UK, Ireland, Germany and the UK.

LABELFISH has a budget of 2.25 million euros with a contribution of 1.46 million euros from ERDF.

The project was implemented in 2012-2014

Link: http://labelfish.eu/

FishPopTrace brought together expertise in fish traceability in order to integrate data from various European projects. The objective was to generate a single compatible database and tissue archive managed by the Joint Research Centre of the European Commission.

The database constituted will be used for determining species, populations and probable origin of the selected fish groups. This capability will serve as a tool to support European Union policies regarding conservation, anti-fraud and consumer protection.

The project was coordinated by the BANGOR UNIVERSITY in the UK and regrouped 14 project partners (research centres and universities) in Denmark, Italy, Spain, Belgium, Norway, Germany, France, Ireland and Russia.

FishPopTrace was financed under the umbrella of the seventh Framework Programme.

The project was implemented in 2008-2011.

Link: http://ec.europa.eu/research/bioeconomy/fish/projects/fishpoptrace_en.htm

Specific objective 2.1: Improving maritime safety and security

Different types of projects aiming at enhancing the Atlantic marine safety and security were co-financed by the EU in the 2007-2013 period. The projects included monitoring, emergency response and R&D platform.

It has not been possible to identify relevant key project for all operational objective from 2007-2013. For this reason there is no information included under some of the headings below.

2.1.A Evaluating and extending as necessary existing warning, reporting and response mechanisms for invasive and harmful marine species and foster exchanges of best practice on how to deal with such threats

No key projects have been identified under this operational objective.?

2.1.B Supporting initiatives undertaken by Member States in the Atlantic, including risk assessments, coordinated response mechanisms and investments in state-of-the-art equipment that contribute appropriately to enhancing coordinated preparedness and responses to marine threats, natural disasters, marine accidents, spills of oil and hazardous material or trafficking

AMASS (the Autonomous Marine Surveillance System) draws on the latest technology to provide a reliable, round-the-clock maritime monitoring solution.

A line of buoys located offshore ensures comprehensive coverage of territorial waters. Each buoy is equipped with the latest visual and acoustic sensors. When a suspicious vessel is detected, images can be transmitted directly to a control centre on shore. This provides authorities with unprecedented observation capabilities and enables them to take swift appropriate action.

Name of the project

The budget is in total € 5,551,702.06 from which € 3,580,550 is financed by the EU funds

The lead partner is Carl Zeiss Optronics (Thomas Anderson). The project has been finalysed and ran from Marts 2008 till August 2011.

ARCOPOLplus is a project framed in the Atlantic Area Transnational Programme that aims to reinforce the preparedness and response to oil and HNS's spills in Atlantic regions through technology transfer, training and innovation.

CETMAR is lead partner.

The budget was 1,920,215 € and it was running from 2012 till 2013.

2.1.C Developing, testing and deploying new technologies to improve the inspection of vessels and enhance the safety and security of ports and shipping by better integrating data from satellites and from air, sea and land-based surveillance facilities and innovative in-situ instruments to improve situational awareness in the maritime domain

PROTECMA: Technology Platform for Coastal and Marine Environment Protection

Implementation of a R & D strategy for research, technological development and innovation

Protection of coastal and marine environment

Prevention, response and mitigation of marine pollution caused by anthropogenic activity

Control and improvement of quality of marine, coastal and transitional water

CETMAR is the lead partner.

The project is running from 2010-2014.

2.1.D Helping to deliver regional sea-basin-related information services within the Common Information Sharing Environment (CISE), based on agreed EU-wide standards and experience gained by Member States in pilot projects

The **Cooperation Project (CoopP)** aimed to support further cross-border and cross-sectorial operational cooperation between public authorities (including EU Agencies) in the execution of the defined maritime functionalities, with a focus on information sharing across sea-basins.

The overall objective was to take steps forward in enabling all maritime surveillance communities such as Border Control, Fisheries Control, Maritime Safety and Security, National Defence, Environmental Protection, Law Enforcement, and Customs Control, to share relevant surveillance data with each other.

The project delivered numerous results. First, a complete functional description of information services used by the partners was established, a list of purposes for information exchange and a complete description of data elements used in the different information services identified have been made out. The project also identified a generic access rights matrix covering the use cases and information services detected. It has also contributed to the economic impact analysis of Integrated Maritime Surveillance, indicating that the introduction of the Common Information Sharing Environment (CISE) will generate up to 2,1 Meuro in cost/effectiveness benefits for European authorities in the period of 2015 - 2020 from the European integrated maritime policy.

Link: http://www.coopp.eu/

There are already a number of projects on cooperation between the maritime authorities relevant to the Integrated Maritime Policy and in particular to the Cooperation Project, such as the pilot projects MARSUNO and BLUEMASSMED, which were implemented during 2009–2013.

The **BLUEMASSMED** project is a partnership between the main stakeholders of maritime surveillance in the Mediterranean area which aim to define the architecture of the future European wide Maritime Surveillance Network and develop methodologies and procedures common to all European members' states.

Bluemassmed is the first European maritime surveillance pilot project. This is one first step towards achieving a better cooperation between the different actors of maritime surveillance (Member States' administrations and European agencies principally).

The pilot project is supported by 37 State partners of the 6 countries involved (France, Italy, Spain, Portugal, Greece and Malta), such as government departments and agencies responsible for monitoring activities at sea (border control, illegal immigration, illicit good trafficking, maritime safety,…) together they

develop mechanisms for improving maritime awareness by sharing operational information between them.

The results of this project have provided important perspectives on how to establish the Common Information Sharing Environment (CISE).

Bluemassmed had a total budget of 3,7 Meuro, with a maximum EU contribution of 2,2 Meuro under the European Integrated Maritime policy.

The Project period was operating from 2009 to 2012.

Link: http://www.bluemassmed.net/

MARSUNO aimed to create a Common Information Sharing Environment (CISE) for the EU maritime domain. The project, gathering 24 authorities from 10 countries, was led by the Swedish Coast Guard.

The purpose of this project was to feed into an innovative process aiming at overcoming sectorial barriers between maritime user communities in view to optimize the efficiency and the cost of maritime surveillance throughout the EU.

The pilot project supports the process of creating a Common Information Sharing Environment (CISE) which will serve as a decentralized information exchange network interlinking existing and future maritime surveillance and tracking systems cross-sector and cross-border throughout the EU and connected to third countries.

The total budget was 3 Meuro, and the EU contribution came to 1,9 Meuro under the European Integrated Maritime policy.

The project was operating 24 months, starting in January 2010 and ending in December 2011.

Link: http://www.marsuno.eu/

Specific objective 2.2: Exploring and protecting marine waters and coastal zones

Different types of projects aiming at enhancing the Atlantic marine and coastal zones were co-financed by the EU in the 2007-2013 period. The projects included monitoring, data management and data sharing as well as knowledge network.

It has not been possible to identify relevant key project for all operational objective from 2007-2013. For this reason there is no information included under some of the headings below.

2.2.1.A Using existing systems and mechanisms to develop and maintain a sustainable integrated programme for surveying and observing the coasts, seabed and water column, covering the waters of EU Member States, Outermost Regions and Overseas Countries and Territories from the coasts to the deep ocean

EuroSITES forms an integrated European network of nine deep-ocean observatories sited in waters off the continental shelf and of greater than 1000m depth, measuring variables from sea surface to sea floor.

It is coordinated by the National Oceanography Centre, Southampton, UK and involves 13 Partners across Europe and the Cape Verde Islands.

The budget is 3.5 Million Euros.

The project was operating from 2008-2011

http://www.eurosites.info/

MyOcean. The main objective of the MyOcean2 project is to deliver and operate a rigorous, robust and sustainable Ocean Monitoring and Forecasting system of the GMES Marine Service (OMF/GMS) to users for all marine applications : maritime safety, marine resources, marine and coastal environment and climate, seasonal and weather forecasting.

In the period from April 2012 to September 2014, MyOcean2 will ensure a controlled continuation and extension of the services and systems already implemented in MyOcean, a previous FP7-funded project (April 2009- March 2012) that has advanced the pre-operational marine service capabilities by conducting the necessary research and development.

http://www.myocean.eu/

EMODnet is a network of organisations working together to observe the sea, to make marine data freely available and interoperable, to create seamless data layers across sea-basins and to distribute the data and data products for a wide range of users including private bodies, public authorities and researchers.

Different partners leading the portals

Separate budgets for each portal

Project period: 2009-2012

http://www.emodnet.eu/

2.2.1.B Developing new instruments and platforms for ocean observation and ecosystem monitoring (including seabed mapping) that increase the number of parameters that can be measured automatically, lower the costs of observation and accelerate the dissemination of data to user

SeaDataNet has developed an efficient distributed Marine Data Management Infrastructure for the management of large and diverse sets of data deriving from in situ and remote observation of the seas and oceans.

Professional data centres, active in data collection, constitute a Pan-European network providing on-line integrated databases of standardized quality.

The on-line access to in-situ data, meta-data and products is provided through a unique portal interconnecting the interoperable node platforms constituted by the SeaDataNet data centres.

The development and adoption of common communication standards and adapted technology ensure the platforms interoperability. The quality, compatibility and coherence of the data issuing from so many sources, is assured by the adoption of standardized methodologies for data checking, by dedicating part of the activities to training and preparation of synthesized regional and global statistical products from the most comprehensive in-situ data sets made available by the SeaDataNet partners.

Data, value added products and dictionaries serve wide uses: e.g. research, model initialisation, industrial projects, teaching, marine environmental assessment.

The project is led by IFREMER

http://www.seadatanet.org/

ESONET stands for **European Seas Observatory NETwork**, networking institutions, persons, tools and know-how on deep sea observatories. It aims to promote the implementation and the management of a

network of long-term multidisciplinary ocean observatories in deep waters around Europe. It wishes to define an organization – with the necessary critical mass – capable of gathering the resources of the participating institutes. The ultimate goal is to define durable solutions through a joint programme of activities.

ESONET is Network of Excellence (NoE) cofunded by the European Commission in the Framework Programme FP6 with an European grant of 7M€ for 4 years (2007-2011) and an estimated total cost of ~50 M€. According to the European Commission definition of Network of Excellence, ESONET will overcome research fragmentation in Europe. Indeed, unifying European initiatives of observatories implementation in Europe, it involves:

- 14 European countries,
- more than 50 institutions and SMEs,
- ~300 scientists, engineers and technicians.

An ESONET observatory is a deep sea station linking marine sensors to the shore by acoustic or cable connection in real or near-real time. These observatories enable data acquisition on oceanological and climatological phenomena at relative high frequency.

The project is led by IFREMER

http://www.oceanlab.abdn.ac.uk/research/esonet.php

2.2.1.C Contributing to a more effective stewardship, cataloguing and distribution of interoperable marine data and a multi-resolution seabed map through contributions to a European Marine Observation and Data Network

The **EMODnet-Geology** (part of the EMODNET project) is one of the seven sub-portals in operation that provide access to quality-assured, standardized and harmonized marine data. There are 36 partners involved in the project such as universities, geological survey or geological institution.

The preparatory phase of this project, from 2009 to 2012 consisted in mapping the Baltic Sea, Greater North Sea and Celtic Sea through the OneGeology-Europe project.

During phase II, from 2013 to 2016, some improvements will be realized such as the extension of the seas covered with improved resolution, or new arrangements for web-mapping services.

This pan-European marine data infrastructure enables effective and efficient marine spatial planning and legislation for environment, fisheries, transport, border control, customs and defense, improves offshore operators' efficiency and costs in gathering and processing marine data for operational and planning purposes, and stimulates competition and innovation in established and emerging maritime sectors.

Project budget: Phase I : 0,9 Meuro , Phase II : 4,2 Meuro under the European Integrated Maritime policy

Link: http://www.emodnet-geology.eu/

2.2.1.D Developing a network of coastal oceanographic forecasting systems (including risk assessments) that build on the Copernicus marine service.

The **EMODnet-Physics** is one of the seven sub-portals in operation that provide access to quality-assured, standardized and harmonized marine data.

There are 7 partners involved in the project such as research institute for exploitation of the Sea (France), meteorological and hydrological Institute (Sweden) universities, or the European Global Ocean Observing System (Belgium).

The overall objective is to provide access to archived and near real-time data on physical conditions. The project is realized in two phases. The first one has delivered lots of data at a higher resolution possible, in

order to in order to evaluate needs and gaps in the present operational capabilities. The phase II, from 2013 to 2016, will be dedicated to the improvements needed to realize a closer connection with the data originators and a more precise collection of data at regional level.

This pan-European marine data infrastructure enables effective and efficient marine spatial planning and legislation for environment, fisheries, transport, border control, customs and defense, improves offshore operators' efficiency and costs in gathering and processing marine data for operational and planning purposes, and stimulates competition and innovation in established and emerging maritime sectors.

Project budget: Phase I : 1 Meuro, Phase II : 1 Meuro under the European Integrated Maritime policy

Link: http://www.emodnet-physics.eu/

2.2.2.A Supporting an assessment of the carbon footprint of the blue economy in the Atlantic area

No key projects have been identified under this operational objective.

2.2.2.B Develop a platform for exchanging best practice on emissions reduction and energy efficiency

No key projects have been identified under this operational objective.

2.2.2.C Developing co-operative partnerships to identify and monitor the impacts of global climate change on marine activities, ecosystems and coastal communities in the Atlantic area, including developing better predictive and risk assessment capabilities

No key projects have been identified under this operational objective.

2.2.3.A Continuing to build on national plans, OSPAR processes and Natura 2000 sites to help develop a coherent network of Marine Protected Areas for Europe's Atlantic coast by agreeing on good practices and shared evaluation processes that could also benefit Macaronesia and the Outermost Regions in the Caribbean

The **MAIA** project aims to create a network of managers and stakeholders involved in marine protected areas along the Atlantic coast.

In order to realize this objective, the project promotes and provides structure for the sharing of experiences, the pooling of approaches and knowledge. The nine project partners, who are public agencies, national institutions and associations from four European countries (United Kingdom, France, Spain and Portugal) work on the creation of common methodologies and participate in the emergence of a technical network of marine protected area managers.

A dedicated website has been created, which gathers a database that will be a benchmark for regular assessment of the status of marine protected areas on the Atlantic coast.

The project was implemented in 2010-2012 and had a budget of 3 MEuro, out of which 1,97 MEuro came from the INTERREG programme Atlantic area (ERDF).

Link: http://www.maia-network.org/

2.2.3.B Encouraging further cooperation between Member States, including through OSPAR, for example on coordinated and integrated monitoring programmes and joint action to restore ecosystems

No key projects have been identified under this operational objective.

Specific objective 2.3: Sustainable management of marine resources

Different types of projects aiming at sustainable management of Atlantic marine resources were co-financed by the EU in the 2007-2013 period. The projects included research and R&D projects and networks. However, it has not been possible to identify relevant key project for each operational objective from 2007-2013. For this reason there is no information included under some of the headings below.

2.3.A Exploring the seafloor and assessing its genetic make-up, biodiversity and potential for providing material for the biotechnology industry, taking account of applicable international law and the need to protect the marine environment

The **Knowseas** project consists in a comprehensive scientific knowledge base and a practical guidance for the application of the Ecosystem Approach to the sustainable development of Europe's regional seas.

The project is supported by 32 partners of the 14 countries involved (United-Kingdom, Germany, Sweden, Italy, Spain, Netherlands, Portugal, Bulgaria, Turkey, Norway, Denmark, Finland, Poland and Ireland), such as universities, foundations and institutes.

Coordinated by the Scottish Association for Marine Science, the project has gathered 31 partners from 15 countries. The Knowseas consortium has developed a number of tools for understanding and implementing the ecosystem approach to management. The overall objective was to help policy makers and regulators and to facilitate the practical implementation of the Ecosystem Approach, in providing a scientifically based suite of tools.
The project has a total budget of 7,4 Meuro, with a maximum EU contribution of 5,8 Meuro under the European Integrated Maritime Policy.

The project was operating from 2009 to 2013.

Link: http://www.KnowSeas.org

EMSO (European Multidisciplinary Seafloor and Water Column Observatory) is a large-scale European Research Infrastructure (RI). It is a European network of fixed point, deep sea observatories with the basic scientific objective of real-time, long-term monitoring of environmental processes related to the interaction between the geosphere, biosphere, and hydrosphere.

Budget: 12 Meuro

Led by INGV, Italy

Project period: 2008-2012

Link: http://www.emso-eu.org/

HERMIONE – Hotspot ecosystem research and Man's impact on European seas

The HERMIONE project focused on investigating these and other ecosystems, including submarine canyons, seamounts, cold seeps, open slopes and deep basins. Scientists from a range of disciplines researched their natural dynamics, distribution, and how they interconnect. The scientists also wanted to find out how these ecosystems contribute to the goods and services we rely on, and how they are affected by natural and anthropogenic change. A major aim of HERMIONE was to use the knowledge gained during the project to contribute to EU environmental policies. This information can be used to create effective management plans that will help to protect our oceans for the future.

Budget: 8 Meuro

Led by NERC, UK

Project period: 2009-12

Link: http://www.eu-hermione.net/

DS3F – The deep sea and sub-seafloor frontier

This proposal brings together scientists from Europe's major ocean research centres and universities to identify the primary issues that need to be addressed in subseafloor drilling with relevance to deep-sea ecosystem research and long-term monitoring in the next 10-15 years

Led by: Bremen Univ., Germany

Project period: 2009-12

Link: http://www.deep-sea-frontier.eu/

TRIDENT – Marine robots and dexterous manipulation for enabling autonomous underwater multipurpose intervention missions

This project proposes a new methodology to provide multipurpose dexterous manipulation capabilities for intervention operations in unknown, unstructured and underwater environments.

Led by: Jaume I Univ., Spain

Project period: 2010-12

Budget: 3,248 Keuros

Link: http://srv.uib.es/project/13

ISOBAB – Isotope constraints on the contribution of metal-rich magmatic fluids to back-arc seafloor hydrothermal systems

Chemical exchanges between the lithosphere-ocean-atmosphere are focused at the active plate boundaries and are important in the global geochemical balance. Eventually, they may influence climate and impact on human activities. Hydrothermal circulation at these boundaries is the engine that transfers chemicals between the lithosphere and ocean. However, the structure of lithospheric contribution (hydrothermal leaching of solid rocks vs. direct mantle degassing) to the ocean chemistry is poorly understood. Insight into this problem (sources of metals and location of ore deposits) becomes increasingly important with the current interest in mining seafloor deposits and has high societal relevance. Unique seafloor hydrothermal processes in back-arc basins (BAB) produce a wide range of vent fluid chemistry and mineral deposits, and are considered as critically important for the genesis of volcanogenic massive sulfide deposits.While it has been suggested that input of magmatic fluids plays a crucial role in the chemistry of the BAB hydrothermal systems, its contribution as source of both transition and precious metals, has been a matter of debate. We propose a research project aimed at providing new constraints to define the relative role of metal-rich magmatic fluids and sub-seafloor metal precipitation/remobilization in BAB mineralization. We will achieve this goal studying non-traditional isotope (Cd-Zn-Sb) systematic of seafloor hydrothermal systems….(substrate rock-fluid-deposit) in a spectrum of seafloor hydrothermal fields (from basalt- to dacite-hosted) in 2 BAB (Manus, Lau). This project is backed-up by results from previous studies that suggest contribution of magmatic volatiles, and that the available sample set is ideal for testing our hypotheses. It is expected that insight gained from Cd-Zn-Sb isotope systematic has great potential to improve our understanding of fundamental sub-seafloor processes responsible for metallogenesis in BAB hydrothermal systems.

Led by: Ifremer, France

Project period: 2011-13

Budget: 230,747.00 €

Link: www.ifremer.fr

MEDEA – Microbial ecology of the deep Atlantic pelagic realm

The project aims at elucidating a major enigma in microbial ecology, i.e., the metabolic activity of prokaryotic communities in the deep sea under in situ pressure conditions, rather than under surface pressure conditions, as commonly done. Analysis of the global data set of prokaryotic abundance indicates that about 40% of prokaryotes reside in depth below 1000m depth with a phylogenetic composition different from that in surface waters. Using a recently fabricated high-pressure sampling and incubation system in combination with advanced tools to assess phylogenetic diversity, gene expression and single-cell activity, we will be able to resolve this enigma on a prokaryotic community level as well as on a phylotype level. This detailed knowledge on the distribution of the auto- and heterotrophic activity of deep-sea prokaryotes under in situ pressure conditions is essential to refine our view on the oceanic biogeochemical cycles, and to obtain a mechanistic understanding of the functioning of deep-sea microbial food webs

Led by: Univ. Vienna, Austria

Project period: 2011-16

Budget: 2500000 euro

Link: http://www.gold.ac.uk/medea/

2.3.B Strengthening links between research and industry in the Atlantic area in order to develop biobanks and identify markets for innovative marine bioproducts (biomedicine, tissue engineering, pharmaceuticals, industrial enzymes) and focusing research on delivering industrial processes for manufacturing them

No key projects have been identified under this operational objective.

Specific objective 2.4: Exploitation of the renewable energy potential of the Atlantic area's marine and coastal environment

Different types of projects in the area of marine renewable energies were co-financed by the EU and implemented in the 2007-2013 period, including R&D studies, testing facilities, cooperation initiatives and, to a lesser extent, the construction of full-scale energy generation facilities.

Funding from the FP7 (7^{th} Framework Programme for research and technological development) and its "Regions of knowledge" initiative enabled to foster several cooperation initiatives between research institutes, universities and businesses across the Atlantic area (e.g. MaRINET, MARINA Platform, H2OCEAN). The ERDF also contributed to several national, cross-border and transnational projects including assessment studies for the evaluation of the potential of marine energy (e.g. ISLES - Irish-Scottish Links on Energy Study), and the construction of several testing sites (e.g. testing offshore wind farm in Paimpol-Bréhat in Brittany, France; testing facility for testing a tidal generator in Ramsey Sound in Wales, UK) as well as the development of existing sites (WavEC site in Portugal).

From a general perspective, these two groups of projects (both studies and testing facilities) sought either to identify the potential of marine energy in coastal areas or continue the development of marine energy technologies in order to develop them from the prototype stage up to a product ready to be commercialized. Beyond technical aspects, the main issue was boosting the cost-efficiency of marine energy technologies.

2.4.A Encouraging assessment and mapping of the potential of the European Atlantic Ocean's energy resource and determining how to mitigate the environmental and navigational impact of the construction, operation and decommissioning of installations as part of regional Smart Specialisation Strategies for offshore renewable energy

Energymare, the main objectives of this project were the creation of a Transnational Cooperation Network

to drive and develop the production of renewable marine energy, the transnational pooling of experience, data collection, supervision of progress and exploration of the potential for innovative sources of energy from the sea. It also aimed to develop pilot projects to test experimental energy production prototypes in the marine environment and to promote cooperation to overcome the limitations which currently impact on implementation and progress.

Energymare was coordinated by the Instituto Energético de Galicia - INEGA in Spain, and comprised a consortium of 10 partners from France, Ireland Portugal, Spain and the United Kingdom.

Energymare had a budget of nearly 3 million euros with a contribution of 2 million euros from ERDF.

The project was implemented from 2012 to 2013.

Link: http://www.energymare.eu/

MAREN, aimed at providing answers to fundamental questions regarding the provision of marine renewable energy. The goal was to provide information on the energy extraction potential of the Atlantic Area coastal waters and to enable the prediction of both the impact of marine renewable energy devices on the environment (natural and human) and the impact of the environment on the performance of these devices. The environmental assessment methodologies developed was applied to sites that have realistic potential for the exploitation of marine renewable energy.

The project led to an environmental impact assessment, a strategic environment assessment and a compilation of Marine Renewable Energy Devices.

The project operated as a transnational multi-disciplinary co-operation across 5 main project partners of all countries of the Atlantic Area: UK, Ireland, Spain, France and Portugal.

MAREN had a budget of 1.5 million euros with a contribution of about 1 million euros from the LIFE programme.

The project was implemented in 2012-2013.

Link: http://www.marenproject.eu/eng/

2.4.B Contributing to a European electricity transmission system that allows the balancing of loads between national systems and provides better links between offshore and onshore energies

ISLE, was a collaborative project assessed the feasibility of creating an offshore interconnected transmission network and subsea electricity grid based on renewable energy sources off the coast of western Scotland and in the Irish Sea/North Channel area.

The results of the ISLES Feasibility Study, carried out by RPS Group, were disseminated at a conference and reports from the project as well as a consultation paper were made available.

ISLES was a collaborative project between the Scottish Government, the Northern Ireland Executive and the Government of Ireland.

ISLE had a contribution of about 2 million euros from the ERDF programme.

The project was implemented in 2008-2011.

Link : http://www.islesproject.eu/

2.4.C Promoting research, development and demonstration of technologies for the construction and maintenance of renewable energy installations for offshore wind, wave, tidal and biomass energies including integration with desalination plants and multipurpose offshore platforms

Atlantic Power Cluster intends to develop a transnational marine energy strategy so the partner regions can seek complementarities to tackle the crucial challenges for the development of marine energies in the Atlantic Area (AA). The project also seeks to develop cooperation and joint approaches to facilitate the identification of new market niches in the renewable energy sector and the redefinition of educational and training programs as per the needs of the offshore and marine energy sector in the AA.

The consortium is coordinated by SODERCAN (Spain), and regrouped 17 partners (local authorities, universities, non-profit organisations) in France, Spain, Portugal, Ireland the UK.

Atlantic Power Cluster has a budget of 3 million euros with a contribution of 65% from the ERDF.

The project started in January 2012 and will end in October 2014.

Link: http://atlantic-power-cluster.eu/index.php/en/

Oceanet aims to train thirteen early stage researchers in the area of floating offshore wind and wave renewable energies to support the emerging offshore renewable energy sector. The OceaNET project will focus its efforts in the areas of array design, implementation and O&M for wave and floating offshore wind energy applications. The development of enabling technologies to support the deployment and operation of arrays will also be explored. The training programme will include individual research projects developed under PhD studies, short courses on a range of topics relating to the field of offshore renewables and secondments to industrial partners to build relations between academic and industrial.

The consortium is coordinated by WavEC Offshore Renewables (Portugal) and regroups universities from Sweden, Germany, Spain, France, the UK, Ireland and the Netherlands.

The project has a budget of 3.4 3 million euros with a contribution of 2.7 million euros from the FP7.

The project began in 2013 and will be carried out for a period of 4 years.

Link: http://www.oceanet-itn.eu/

MaRINET is an EC-funded infrastructure initiative comprising a network of research centres and organisations that are working together to accelerate the development and commercial deployment of wave energy, tidal-stream converters and offshore-wind turbines for electricity generation. The initiative aims to streamline and facilitate testing by offering periods of free-of-charge access to world-class test facilities and by developing joint approaches to testing standards, research and industry networking & training.

MaRINET brings together an Infrastructure with 42 Facilities from 28 Partners spread across 11 EU countries and 1 ICPC, Brazil.

MaRINET has a budget of 8.7 million euros from the FP7.

The project started in April 2011 and will end in March 2015.

Link: http://www.fp7-marinet.eu/

2.4.D Encouraging the harnessing of the special geological, oceanographic and meteorological conditions of the Outermost Regions of the Atlantic in order to help them achieve energy self-sufficiency and meet carbon emission reduction targets

H2Ocean is a project aimed at developing an innovative design for an economically and environmentally sustainable multi-use open-sea platform. Wind and wave power will be harvested and part of the energy will be used for multiple applications on-site, including the conversion of energy into hydrogen that can be stored and shipped to shore as green energy carrier and a multi-trophic aquaculture farm.

The H2Ocean consortium is composed of 17 partners from 5 European countries (Spain, United Kingdom, Denmark, Germany and Italy). The group is constituted of 10 innovative SMEs, 1 Large Enterprise and 6 leading Public Research Organizations (4 Universities and 2 Institutes).

H2Ocean has a budget of 6 million euros with a contribution of 4.5 million euros from FP7.

The project started in January 2012 and will end in December 2014.

Link: http://www.h2ocean-project.eu/

Specific objective 3.1: Promoting cooperation between ports

Different types of projects in the area of marine renewable energies were co-financed by the EU and implemented in the 2007-2013 period. However, most identified projects are included in the baseline situation above, e.g. TEN-T infrastructure projects. A few illustrative examples are included below, in spite of the fact that the projects are old.

3.1.A Facilitating upgrades of infrastructure to improve connectivity with the hinterland, enhance intermodality and promote fast turnaround of ships through measures such as provision of shore side electricity, equipping ports with liquefied natural gas refueling capacity and tackling administrative bottlenecks

e-Maritime is aimed at supporting the development of sustainable maritime transport in Europe through the development of a framework that will be based on the latest information, communication, and surveillance technologies. In line with EU transport policy objectives, e-Maritime solutions must offer a holistic approach that extends beyond pure transport services addressing logistics, customs, border control, environmental and fishing control operations. e-Maritime must be considered in its broadest sense as it promises to provide interoperability between all maritime administrative functions, with important applications in commercial operations.

http://www.emaritime.eu/

Maritime Transport Co-ordination Platform (MTCP) – This Think Tank and stimulating body consists out of authorities in their fields of expertise. It is expected from this centre of excellence e.g. a firm opinion on what should be the maritime policy in these sectors. For the next three years, eighteen studies are scheduled. The project will also supply external experts to support policy development. A portal/database on maritime research outputs will be created as well.

April 2004 until March 2007
Coordinator: British Maritime Technology Ltd - UK
23 contractors
EU contribution : €2 740 660
http://www.maritime-transport.net/

3.1.B Enabling ports to diversify into new business activities such as the maintenance of offshore renewable energy installations or tourism

No key projects have been identified under this operational objective.

3.1.C Analysing and promoting port networks and short-sea shipping routes between European ports, within archipelagos and to the coast of Africa through initiatives such as Motorways of the Sea to increase seaborne traffic

No key projects have been identified under this operational objective. However, Short sea shipping routes supported under the Marco Polo initiative are described in the baseline situation above.

Specific objective 4.1: Fostering better knowledge of social challenges in the Atlantic area

The EU financed a few projects aiming at fostering better knowledge of social challenges in the Atlantic area. Projects included networking activities and the development of transmission methodologies, aiming at facilitating the engagement of cities in the local economy, establishing a socio-economical network and allowing middle-sized cities to access the knowledge economy.

Projects listed below come mainly from the Interreg programme Atlantic Area.

4.1.A exchanging best practice on enhancing the health, social inclusion and wellbeing of coastal populations and developing appropriate and usable marine socio-economic indicators to measure, compare and follow trends in the development of the blue economy

MARNET, the aim of the project is to analyse and valorise the marine resources available through the establishment of a marine socio-economic network that will create and collate comparable marine socio-economic data and utilise this data to support marine socio-economic development initiatives along the Atlantic Area.

MARNET is coordinated by the Border Midland and Western Regional Assembly in Ireland, and regroups universities, research centers and public bodies in France, Spain, Portugal and the UK.

MARNET has a budget of nearly 1.3 million euros with a contribution of about 850 000 euros from ERDF.

The project started in January 2012 and will end in June 2014.

Link: http://marnetproject.eu/?lang=fr

The **ANATOLE** project, aimed to give an authorising role to cities using the reformed and innovative organisational methods of local economy. The project brought together area based operational partners, intermediary bodies between producers and cities, and cities or other regional and local authorities in four countries of the Atlantic Area.

The results of the project are operational tools intended for the engagement of cities in local economy.

The project was coordinated by the AC3A - Association des Chambres d'Agriculture de l'Arc Atlantique in France, and regrouped 9 partners in Spain, France and Ireland.

ANATOLE had a budget of 1.5 million euros with a contribution of about 1 million euros of ERDF.

The project was implemented in 2010-2012.

Link: http://www.anatoleproject.eu/

KNOWCITIES, aimed at carrying out an innovative methodology for facilitating the access and transition to the knowledge economy, as a mean to ease up the transnational cooperation in common matters all linked to the sustainable urban development as an attractive and urban marketing factor for the middle sized Atlantic cities.

The Lead Partner is Fomento San Sebastian S.A., was the coordinator of a partnership composed by Fomento de San Sebastián S.A., Dos Hermanas Council, Avilés Council, Gijón Council, SevillaGlobal Urban Development Agency (España); Vannes Innovation Promotion Expansión, Audelor (Economic Development and Urban Planning Agency for the Pays de Lorient), Tecnopole Brest Iroise; Brest métropole Oceane- urban council (Francia); Faculty of Economics University of Coimbra (Portugal); Cardiff Council (UK) and Donegal (Eire).

KNOWCITIES had a budget of 3 million euros with a contribution of about 2 million euros of ERDF.

The project was implemented in 2009-2011.

Link: http://www.knowcities.eu/

Specific objective 4.2: Preserving and promoting the Atlantic's cultural heritage

Different types of projects aiming at preserving and promoting the Atlantic's cultural heritage were co-financed by the EU and implemented in the 2007-2013 period. Those project included networking, development and promotion of touristic products and investigation.

The projects were transnational projects funded by the ERDF through the INTERREG Atlantic Area programme.

The projects aimed on one hand and investigating and conserving the cultural heritage of the Atlantic Area, and on the other hand at promoting this cultural heritage through the creation of touristic products.

4.2.A Investing in marine sport, marinas and nautical leisure activities

No key projects have been identified under this operational objective.

4.2.B Investing in port services, including those for cruise passengers

Cruise Atlantic Europe, was a project aiming at strengthening the position of the Atlantic area in the European market of cruise tourism by the creation and promotion of new tourist products worldwide recognized by ship-owners and shipping companies that, through the action of a network of ports, cities and regions, economically improved the specific dimensions of Atlantic culture and identity.

The project was coordinated by the Administração dos Portos do Douro e Leixões, S.A. (APDL) in Portugal, and regrouped 6 project partners in France, Ireland, Portugal and Spain.

Cruise Atlantic Europe had a total budget of 739.698 € and benefited of an ERDF contribution of 480.802,03 €.

Link: http://cruiseatlanticeurope.com/

4.2.C Investing in identifying and promoting cultural and natural attractions of the Atlantic seaboard such as artisanal fishing, local cuisine and maritime heritage

Fishernet aimed at investigating best practices for collection and dissemination of fishing cultural heritage and at establishing a network for ongoing development of fishing heritage opportunities and maintenance of fishing communities.

The project regrouped the following partners; Aquatera Ltd., Cogami, Eurimpact, Europartners 2000, Galician Ministry of Culture, Galician Ministry of Sea, Lira Fishermen Association, Muros Fishermen Association, Museums of Coastal Heritage and Reconstruction in Finnmark, O Pindo Fishermen Association and Stefansson Artic Institute.

The fishernet project was co-financed by the ERDF.

The project took place from 2008 to 2010.

Link: http://www.fishingheritage.net/

DORNA has made progress in the conservation of the traditional maritime heritage and shipbuilding in

wood from two fronts: inventory and compilation of existing assets and economic stimulation from different points of view: commercial (Brand BATE, craft marketing platform), innovative (Eco-navigation, life cycle analysis), tourism (Exhibitions and integrated tourism product).

The consortium was coordinated by Diputación de A Coruña in Spain, and regrouped 6 partners (associations, universities and local authorities) in Spain, Portugal and the UK.

DORNA had a budget of 1.9 million euros with a contribution of 1.2 million euros from the ERDF.

The project took place from 2008 to 2010.

Link: http://www.proyectodorna.eu/index.php?idIdioma=3

Ecosal Atlantis aimed at developing a joint, integral and sustainable tourism based on the cultural and natural heritage of traditional Atlantic saltworking sites.The project focused on three key activities designed to develop tourism in Atlantic saltworking sites: Heritage; Territorial development; Biodiversity and Eco-tourism.

Ecosal had more than a dozen partners from countries where there has traditionally existed a culture associated with salt:

- Spain: Alava Provincial Council (leader); The Cultural Association of Friends of Inland Salinas; Andanatura Foundation,
- France: Ecomuseum Marais Salant, Geolittomer; Ecomuseum Daviaud; Community Comunes de l'Ile d'Oleron; Museum Marais Salant Batz,
- United Kingdom: Bournemouth University,
- Portugal: University of Aveiro; Aveiro Municipal Chamber; Rio Mayor Municipal Chamber; Figueira da Foz Municipal Chamber.

65% of the project was funded by ERDF through the Atlantic Area Trans-national Programme.

The project took place from 2010 to 2012.

Link: http://ecosal-atlantis.ua.pt/index.php?q=content/ecosal-atlantis-ecotourism-atlantic-salt-marshes

4.2.D Investing in protecting and restoring tourist attractions, including coastal and underwater cultural attractions and maritime heritage sites, with archaeological, ecological or historical value following as appropriate the principles of the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage

ULTREIA's general objective was is to promote a cultural and religious sustainable tourism linked to maritime and land routes to Compostela. This promotion was done through two important axes: the development of tourism Agenda 21 and the creation of an Atlantic regions network that developed tourism products inside a joint Atlantic cultural framework.

The ULTREIA was coordinated by Xunta de Galicia in Spain, and regrouped 5 partners in France, Spain, Ireland and Portugal.

ULTREIA had a budget of 1.3 million euros with a contribution of 890 000 euros from the ERDF.

The project took place from 2008 to 2010.

Link: http://atlanticprojects.ccdr-n.pt/project-area/ultreia?set_language=en&cl=en