OSPAR COMMISSION

Overview of OSPAR Regional Economic and Social Analysis Data

Biodiversity Series

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OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. The Contracting Parties are Belgium, Denmark, the European Union, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. Les parties contractantes sont : l'Allemagne, la Belgique, le Danemark, l’Espagne, la Finlande, la France, l’Irlande, l’Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d’Irlande du Nord, la Suède, la Suisse et l’Union européenne.

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Contents

1. Introduction

This is an Appendix to the final report from an eftec-led project for OSPAR to produce an Economic and Social Analysis (ESA) report for the OSPAR region [1]. This Appendix provides, to the extent possible from existing country ESA data, a quantification of socio-economic activity in the OSPAR region. It is intended to fulfil the requirement in the Marine Strategy Framework Directive (MSFD) that Member States' work is coordinated across marine regions or sub-regions.

The scope of the report is limited to the material covered in the country ESA reports, and use of existing comparable information sources. The geographical boundary for the analysis is the area covered by the OSPAR Convention. In the context of this project, the significance of the differences between the OSPAR sea regions and the MSFD sub-regions is judged to be minor. It is a less significant factor in trying to compile an OSPAR ESA report than other sources of inaccuracy, such as the lack of compatibility between countries' definitions of marine data.

The timing of this report was planned for when final ESA material was expected to be available from the majority of countries. This provides a sufficient evidence base to assess the compatibility of data across countries, and produce an OSPAR region ESA report.

The collation of ESA material for this report has identified several potential barriers that restrict the usefulness of the draft OSPAR-region ESA report. These are discussed in Section 6 of the main report. However, there are also some areas with compatibility between data, such as most countries using the Marine Accounts Approach and reporting employment figures for key sectors. These factors mean that, while an OSPAR region ESA report has been compiled, it has limitations in terms of comparability of methods and data-years, and gaps from unavailable data.

Many of the differences observed relate to how this information will subsequently be used to inform MSFD implementation, for example through links with GES or on pressures in the marine environment. These uses represent the next challenges for ESA in the OSPAR region, but were not a core part of the ESA initial assessment. Therefore it is unsurprising that all countries do not yet have a unified approach.

The ideal long-term situation is for ESA reports to use consistent definitions of marine sectors and activities in order to allow accurate analysis of potential changes to marine management in order to implement the MSFD. However, achieving this may not be straightforward, a range of potential actions towards this objective are described in the project's main report.

[1] While there are 15 members countries in OSPAR, three (Luxembourg, Switzerland and Finland) are excluded from this analysis for not having coastlines and EEZs in the region.

2. OSPAR Overview ESA Data

The Sectors covered in this collation of data are those where activity is reported for enough countries to give a reasonable picture of activity in the OSPAR region, namely:

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

For each area of activity, quantitative data is presented for each country, and is summarised by OSPAR sea-region and for the OSPAR region as a whole. For submarine cable setting and maintenance, although data are reported by six countries, economic figures cannot be collated for this sector.

The OSPAR sea-regions covered are:

- OSPAR II - Channel and North Sea
- OSPAR III - South part of Celtic Sea
- OSPAR IV - Bay of Biscay

These three OSPAR sea-regions correspond to three of the regions identified within the in the North-east Atlantic Ocean under Article 4 of the MSFD:

II. the Greater North Sea, including the Kattegat, and the English Channel;

III. the Celtic Seas;

IV. the Bay of Biscay and the Iberian Coast;

The Atlantic Ocean is also identified under Article 4 of the MSFD, but as above, is not distinguished in the socio-economic data identified. Activity in the Atlantic (i.e. in both OSPAR region V and the Atlantic Ocean MSFD region) are assumed to be reflected in the data for adjacent regions. The overlaps between the boundaries of national waters and the OSPAR sea-regions are complex, and in some cases national data cannot be divided accurately between OSPAR sea-regions.

There are significant caveats that apply to all the data in the Tables: the data represent high-level estimates of economic activity. All have a degree of inaccuracy, which in some cases is significant. These are discussed in Section 2 of the main report, but can be summarised as:

- Differences in methods and approaches (e.g. the inclusion of land-based activities);
- Data that can be summed are an incomplete total for the region;
- Differences in temporal scales;
- Lack of information on whether employment figures are full-time, part time or full-time equivalent;
- Different assumptions about spatial data scale, and

- Interpolation, extrapolation and estimates of figures, in particular for OSPAR sea-region figures and employment data.

The year of the data and units, which vary widely, are noted. Financial data are presented in € at 2012 prices. Due to incomplete breakdowns, the data for the OSPAR seas II, III and IV do not sum to the regional total.

Although the data in Table A1 is broken down by OSPAR sea-regions, the data becomes less robust at this level, due to uncertainties in divisions of data and because missing data has a greater influence on the figures.

The data from Table A.1 are summarised in Tables A.2 and A.3. The data available indicate marine economic activity with turnover of €435 bn, employing 2.46 million people. The highest contribution to turnover comes from oil and gas, the second from ports and shipping. The third highest is from renewable energy, but GVA in this sector is relatively low - it should be recognised that many investments in this sector are not yet generating energy.

3. Cost of Degradation Evidence

The methods used to compile cost of degradation (CoD) data are described in Section 2.2 of the main report. This revealed significant differences that restrict comparability between countries and compilation of overview data for the OSAPR region. Nevertheless, OSPAR data are summarised in Table A.4.

The CoD data that are available are limited to just four countries. Furthermore, due to the uncertainties in estimating the CoD, the data for those countries are not necessarily complete. The different methods used by different countries means that the values presented cannot be added. It is also important to note that the cost-based approach does not produce an estimate of value.

Given the lack of data on CoD, the results are not broken down by sea-region.

4. Case Study of Ports and Shipping

As well as general comparisons and collation of the contents of the ESA reports, the work has looked at two sectors (Ports and Shipping, and Leisure and Tourism) in more detail. In a well-defined sector like ports and shipping, there are some common features in the country data, so a reasonable estimate of the scale of OSPAR region economic activity is possible. However, it remains an estimate subject to caveats. In a less well-defined sector (e.g. leisure and tourism), there is great heterogeneity of data, and while some information can be collated, data cannot be summed.

An overview of the types data on Ports and Shipping activity within ESA reports is provided in Table A.5.

Table A.1: OSPAR Region ESA Data

Area	Summary of Data	Notes on Data
Commercial Sea Fisheries		
Total	€4.1 bn turnover €558 m GVA 75,000 employment	Data from 11 countries, not all report turnover or GVA. Some countries include indirect employment. Spain does not report employment.
OSPAR II	€2 bn turnover	
OSPAR III	€472 m turnover	
OSPAR IV	€1 bn turnover	
Tourism and Recreation		
Total	€21 bn turnover, plus €6 bn GVA, plus €19.8 bn contribution to GDP. 1.3 m employment	Data from 11 countries, not all report tu rnover or employment. Exclude indirect employment
OSPAR II	€14 bn turnover 299,400 employment	
OSPAR III	€944 m turnover	
OSPAR IV	€6 bn GVA, plus €19.8 bn contribution to GDP. 1 m employment	
Ports and Shipping		
Total	306,000 employment €47 bn GVA €149 bn turnover	Data from 10 countries, some included indirect employment and some countries report on full-time equivalent employment. Not all countries reported on GVA
OSPAR II	305,000 employment €47 bn GVA €89 bn production value	
OSPAR III	€330 m GVA €2 bn production value	
OSPAR IV	€150 m GVA	
Aquaculture		
Total	€3 bn turnover 42,200 employment €706 m GVA	Data from 9 countries, not all have re ported on turnover, employment or GVA. Some countries have included aquaculture in Commercial sea fisheries
OSPAR II	€516 m turnover 3,100 employment €222 m GVA	
OSPAR III	€337 m turnover 2,000 employment €169 m GVA	
OSPAR IV	€2 bn turnover 31,200 employment €315 m GVA	

Oil and Gas		
Total	€174 bn turnover	Data from 9 countries. Not all countries have reported on employment, GVA or turnover
	717,000 employment	
	€6.2bn GVA	
OSPAR II	€170 bn turnover 716,000 employment €6 bn GVA	
OSPAR III	€4 bn turnover €137 m GVA	
OSPAR IV	No data reported	

Renewable Energy		
Total	€83 bn turnover	Data from 9 countries, some countries did not report on turnover, employment or GVA and several countries provided no data.
	14,200 employment	
	€4.6 bn GVA	
OSPAR II	€76 bn turnover 14,100 employment €160 m GVA	
OSPAR III	€106 m turnover €34 m GVA	
OSPAR IV	No data reported	

Aggregate Extraction		
Total	€1.1 bn turnover	Data from 6 countries, several countries do not report on turnover, employment or GVA. For some countries there are no data recorded.
	6,050 employment	
	€330 m GVA	
OSPAR II	€1 bn turnover 4,100 employment €286 m GVA	
OSPAR III	€14 m turnover €1 m GVA	
OSPAR IV	€47 m turnover 190 employment €20 m GVA	

Table A.2: OSPAR Region ESA Data Overview

Sector	Turnover	GVA	Employment	Notes on Data
Commercial Sea Fisheries	€4 bn	€558 m	75,000	Data from 11 countries, range of years and definitions
Tourism and Recreation	€21 bn		1.3 m	Incomplete data from 11 countries
Ports and Shipping	€149 bn	€47 bn	306,000	Incomplete data from 10 countries, range of definitions
Aquaculture	€3 bn	€706 m	42,200	Incomplete data from 9 countrie s, range of definitions (some include aquaculture)
Oil and Gas	€174 bn	€6.2 bn	717,000	Incomplete data from 9 countries
Renewable Energy	€83 bn	€4.6 bn	14,200	Incomplete data from 9 countries
Aggregate Extraction	€1.1 bn	€330 m	6,050	Incomplete data from 6 countries
Summary	**€435 bn**	**€60 bn**	**2,460,000**	Incomplete data and a range of definitions lie behind the data.

Table A.3: OSPAR ESA Data Overview by Sea-Region

OSPAR Region	Turnover	GVA	Employment
II	€354 bn	€27.5 bn	1.34m
III	€5.9 bn	€671 m	
IV	€3.0 bn	€6.5 bn	31,000
NOTE: total impacts are lower than in Table S1 because not all data can be allocated to an OSPAR Sea Region.			

Table A.4: Overview of OSPAR Cost of Degradation Data

Country	OSPAR sea	Data (Euros in 2012 prices)	Year	Notes on Data
Belgium	OSPAR II	Unknown; no quantitative figure given		Costs of degradation based on costs of measures and total funding received from EU funds, concept of degradation implicitly applied to GES.
Denmark	OSPAR II	Unknown; no quantitative figure given		Due to the high level of uncertainty, the cost of degradation if the sea environment continues to deteriorate to 2020 is not quantitatively estimated, but described in qualitative terms.
France	OSPAR II OSPAR III OSPAR IV	Unknown; no quantitative figure given		Cost of environmental degradation declined in four categories: opportunity cost, mitigation cost, costs related to positive action in favour of the environment, transaction costs. Specific mention of Micro pollutants and oil slicks when talking about the cost of degradation
Germany	OSPAR II	Unknown		
Ireland	OSPAR III	Unknown; no figure reported		
Netherlands	OSPAR II	€147 million per year	2012	Cost-based approach, calculated as total spending of different sectors to avoid degradation of the marine environment
Norway	OSPAR II	Unknown; no information on cost of degradation reported		
Portugal	OSPAR IV	Unknown; no quantitative figure given		Mainly qualitative using examples from scientific papers to demonstrate how the cost of degradation has been used in other parts of the world
Spain	OSPAR IV	€451 million	2009	Cost-based approach used with five administrative budgets. Cost estimates may be directly or indirectly related, as exact relevant amount of some policies could not be estimated.
Sweden	OSPAR II	Cleaning beaches: €0.6-€1 million per year Noise €58-104 per household/year Marine litter impacts: €0.74m/yr, collection €0.8m	(Litter: 2007 & 2010)	Marine litter: fouled propellers, blocked intake pipes, damaged nets and lost catch
UK	OSPAR II OSPAR III	Between €6-22 million	2012	The cost of degradation is the concept of degradation implicitly applied to GES; estimated by valuing the difference in societal welfare between the expected state of the environment if Good Environmental Status (GES) is achieved and the expected state of the marine environment under BAU.
Summary		**Substantial underestimate of €600m/yr**	**varied**	**Data from 4 countries represent a minority of the costs.**

Table A.5 Brief description of OSPAR Region Country Ports and Shipping Data and Information

	Belgium	Denmark	France	Germany	Ireland	Netherlands	Norway	Portugal	Spain	Sweden	UK
Ports-Terminals Descriptor	Turnover (8 years, 2003 to 2010), total Belgium tonnages (6 years 2003 to 2008)	Total of 140 ports, (66 large ports with 98% of turnover), Value for 2010 of 87mil tonnes good, 1mil fish	8 Major ports (goods & passengers volume), split of ports into Goods Ports, Marinas.	Qualitative description of total tonnage	Qualitative data turnover (GVA) for 2007, tonnage (9 years, 2000 to 2009)	Data on tonnages (1 year, 2009) with projections for 2015, 2020, 2040.	Qualitative information on port categorisa-tion	Quantitative information on ports (volume of goods, nº of passengers, marketed fish) 2010	Qualitative data on ownership and number of ports (Total of 46 state ports, 320 fishing ports, 355 marinas and 126,963 moorings)	Tonnages by cargo type (1 year, 2001)	Spatial data, size and distribution
Ports-Terminals Employment	Employment figures (6 years, 2003 to 2008) for Ports, Employment figures for Marine Aggregates	Estimate of 60,000 to 70,000 people work in or in connection to ports	Some data on Marina employment, Direct Port employment	Qualitative description of employment with examples	Data against GVA for one year (2007).	Data (3 separate years, 1995, 2000, 2007) categorised by Dutch Zones	Data (1 year, 2009) with projections for 2030	Quantitative information on ports (number of workers) 2010	Data (I year, 2009 - 35,000 job positions at the national level)	Data (1 year, 2009) including ports and water transport	Data from SIC codes (1 year, 2007)
Ports-Terminal Emissions	No information	Data on emissions and estimated cost of emissions	No information	Qualitative information only, no data	No information	Qualitative information	Data on emission values and projections for 2030	Information related with the international policy context.	No information	Qualitative information on effects of emission restrictions	Qualitative information
Shipping - Descriptor	Shipping tonnages data total Belgium tonnages (6 years 2003 to 2008), no vessel numbers	Quantitative description of turnover at DKK 32.6 billion.	No information	Qualitative description of shipping employment and vessel numbers with examples	Tonnage (9 years, 2000 to 2009) graphed. Cruise industry data (1 year, 2007) including GVA	Data on employment, sea lane usage displayed	AIS data used to derive spatial usage, qualitative information on tonnages	Quantitative information on shipping (tonnages, number of ships, number of passengers) 2010	Quantitative data (Tonnages, (number of ships, number of passengers) graphed. (1 year, 2009)	AIS data (spatial) used to derive sea area usage	Data on throughput tonnages (10 years, 1997 to 2007), ship calls (1 year, 2007) split by ship type

Shipping - Marine Dredging & Disposal	Graphed data (9 years, 1997 to 2005), spatial data for one year (2008), also beneficial use volumes	No information	No information	Spatial representation of disposal locations.	No information	Qualitative information on cost/value of dredging	No information	Quantitative information on dredge material and cost/volume of dredging, 2010 and 2009 respectively	Qualitative information on dredge material is found on the Pressures and Impacts Analysis	Data (5 years, 2005 to 2010)	Spatial dredge disposal, data (7 years, 2001 to 2007) number of licences issued against tonnages
Shipping - Anchoring	No information	No information	No information	No information	No information	No information	Qualitative reference	Quantitative information on anchoring docks (number) 2009/2010	No information	No information	Spatial data identify anchorage areas

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OSPAR's vision is of a clean, healthy and biologically diverse North-East Atlantic used sustainably

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