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COMMISSION STAFF WORKING DOCUMENT

Marine Data Infrastructure
Outcome of Public Consultation

EXECUTIVE SUMMARY

As part of the preparation work for a European Marine Observation and Data Network announced in the EU's Maritime Policy Blue Paper[1] and clarified in a roadmap in 2009[2], 300 stakeholders replied to an on-line survey. 42% replied on behalf of their organisations. The other replies were provided in a personal capacity although a large majority of these were from those working within organisations on the collection, processing, assembling or application of marine data. In other words the great majority of replies were based on hands-on experience.

Statistically significant samples of replies were received from four main groups - private industry, public authorities, researchers and international stakeholders. The international group was made up of European and international bodies, European projects and civil society. A separate analysis was carried out for each of these groups but the four groups had broadly similar opinions.

Nearly all require data of different natures – physical, chemical, biological etc. - and are greatly dissatisfied with the current marine infrastructure. Data are hidden with over-restrictive access and re-use conditions, few indications of quality, incompatible standards, unrealistic pricing and insufficient temporal and spatial resolution.

There was strong support for the Commission's basic principles for improvement. 70% strongly agreed and 90% in total agreed with the first five principles: sustainable EU support, interoperability, multi-use, charging at marginal cost and clearer indications of ownership, accuracy and precision.

Agreement on the other three was also strong but somewhat lower. Approximately 40% strongly agreed and 80% in total agreed that data should be processed at a sea-basin level, that EMODnet should build on existing structures and that the decision making process should be user-driven.

As well as benefitting from an improved marine data infrastructure, many stakeholders, particularly from the public sector, felt that they would be able to contribute towards its improvement.

Some stakeholders indicated that they wanted an overall view of how the different EU initiatives fit together – not just EMODnet. The recommendation will be taken on board in the Communication on marine knowledge planned for early 2010.

- [1] An Integrated Maritime Policy for the European Union Brussels, 10.10.2007 COM(2007) 575 final
- [2] Building a European marine knowledge infrastructure: Roadmap for a European Marine Observation and Data Network, SEC (2009) 499 (final), 4 April 2009

1. BACKGROUND

Improving marine knowledge has always been an integral aim of the Commission's integrated maritime policy which is a strategic objective of the Commission's 2005-2009 workplan[3]. The need for improving Europe's data infrastructure was recognised in the year-long consultation that followed the maritime policy Green Paper[4]. Consequently a European Marine Observation and Data Network (EMODnet) was announced in the EU's Maritime Policy Paper[5] which was welcomed by the European Council in December 2007. A roadmap[6] then proposed a set of principles that should govern such a network.

This public consultation followed. It was announced on the EU maritime policy web-site immediately following the release of the roadmap on 7 April, 2009 and was closed on 2 June, 2009. The objectives were to assess current opinion on

1. the current state of Europe's marine data infrastructure

2. the general principles for moving forward announced in the Roadmap

3. what the EU's contribution should be in improving matters.

The questionnaire was on-line and open. An analysis of the multiple-choice replies received is presented as annex 1. Answers to questions where the respondent was invited to reply in free text format are reproduced as annexes 2, 3 and 4.

This document is a summary of the consultation which helps the Commission assess different options for moving forward on marine knowledge. It fed into an impact assessment for a marine data infrastructure that was finalised in late 2009

2. RESPONDENTS

300 replies were received. These were divided as follows

- [3] Strategic Objectives 2005 – 2009 Europe 2010: A Partnership for European Renewal Prosperity, Solidarity and Security 26.1.2005 COM(2005) 12 final
- [4] Towards a future Maritime Policy for the Union: A European vision for the oceans and seas 7.6.2006
- COM(2006) 275 final
- [5] An Integrated Maritime Policy for the European Union Brussels, 10.10.2007 COM(2007) 575 final
- [6] Building a European marine knowledge infrastructure: Roadmap for a European Marine Observation and Data Network, SEC (2009) 499 (final), 4 April 2009

Table 1Respondents to survey

	number	percent
replying on behalf of organisation	125	(41.7%)
replying in a personal capacity on the basis of personal working experience within an organisation	139	(46.3%)
I am replying in a personal capacity on the basis of my general awareness of marine issues rather than my present particular responsibilities	36	(12%)

In fact the answers of those replying on behalf of organisations, did not differ significantly from official answers of individuals within organisations. Furthermore, practically all those replying were professionals. Only 5 (less than 2%) said that marine data was not relevant to their work.

The replies came from 15 different types of body, which for ease of analysis we have divided into 4 groups – private, authority, research (mostly but not exclusively, public) and "other". The "other" included environmental lobby groups although some of those who are most energetic in defence of marine conservation did not reply.

Table 2Respondents to survey classified by type of organisation

group	type	Total
private	01 industrial interest group	9
	02 large enterprise (more than 250 employees)	12
	03 medium enterprise (between 50 and 250 employees)	7
	04 small enterprise (between 10 and 50 employees)	4
	05 micro enterprise (less than 10 employees)	9
	06 self-employed	11
		52
authority	07 local government	18
	08 national government	67
		85
research	09 public research institution	75
	10 university	30
	14 private research institution	9
		114
other	11 European project or body	19
	12 international body	13
	13 civil society, environmental group, charity	8
	15 none of these	9
		49
TOTAL		**300**

Bodies from all coastal European Union and European Economic Area countries responded in numbers broadly in line with their populations although the 2004-intake of Member States were rather under-represented.

Table 3Respondents to survey classified by country

Country	private	authority	research	other	Total
United Kingdom	7	13	14	3	37
Italy	6	9	16	1	32

Country	private	authority	research	other	Total
Spain	4	4	14	1	23
Germany		6	11	2	19
European organisation or project	1			17	18
France	3	7	6	2	18
International organisation	4		1	11	16
Norway	3	5	7	1	16
Portugal	2	6	5	2	15
Ireland	3	3	9		15
Netherlands	3	3	3	1	10
Sweden		6	1	2	9
Greece		4	5		9
Denmark		5	1	2	8
Finland	2	3	2		7
Turkey	3		2	1	6
Poland		1	4		5
Belgium	1	1	2		4
Bulgaria		1	1	1	3
Cyprus	1	1		1	3
Iceland	1	2			3
Malta		2	1		3
Croatia			1	1	2
Latvia		1	1		2
Austria			1		1
Estonia		1			1
Lithuania			1		1
Luxembourg		1			1
Romania			1		1
Slovenia			1		1
Other	8		3		11
Total	**52**	**85**	**114**	**49**	**300**

These respondents were asked what kind of data they needed (Figure 1). Nearly all of them require data from more than one discipline. Fisheries scientists do not only need fisheries data. This indicates that compatibility between different disciplines is essential. 70% indicated that bathymetry and physical data were essential to their work and 90% found it useful. The replies from the different users (private, public research, other) did not differ greatly.

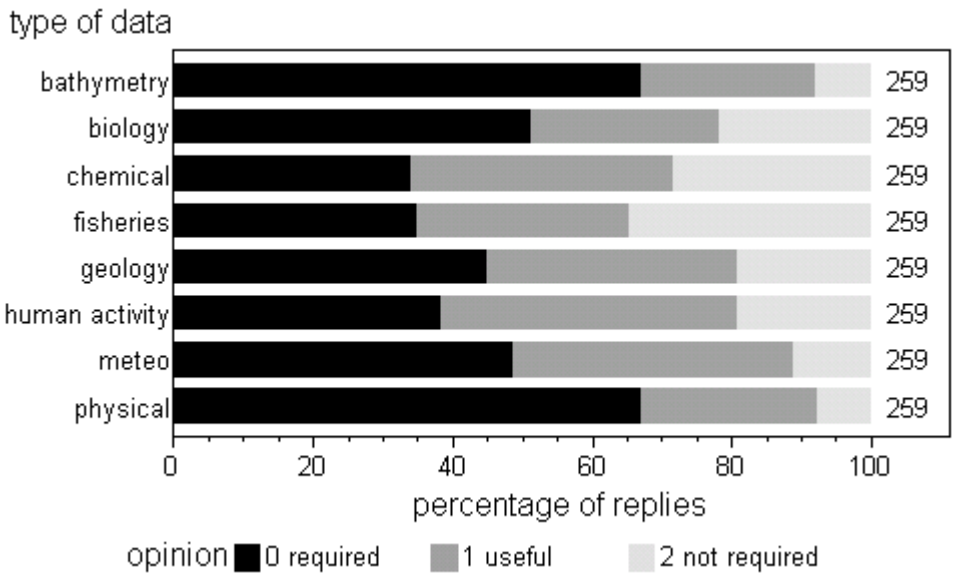


Figure 1Type of data required (respondents ere allowed to choose more than 1)

Table 4 indicates the end-use of the data. 60% of researchers saw understanding the planet's behaviour and applying this knowledge for marine management as primary applications for data. The authorities and private sector were more varied in their use. 40% of the private sector used data to help them exploit resources, develop new infrastructure or protect coastlines. 40% of the authorities saw informing the public and managing marine resources as primary objectives. Nearly 30% of both private bodies and public authorities were involved in ensuring safe navigation.

Table 4 Why do the stakeholders require marine data? They were allowed to choose up to three. The numbers indicate the percentage of the stakeholder group who chose a particular purpose.

reason	private	authority	research	other
behaviour of the planet	8	18	62	35
coastal protection	39	36	23	20
exploit resources	42	15	17	15
inform the public	8	40	29	45
marine management	26	46	62	65
national defence	0	10	1	0
new developments	47	33	22	18
promote or support tourism	0	3	1	5
regulatory requirement	18	26	13	28
safe navigation	32	31	4	10
teaching students	8	4	23	8

3. SATISFACTION WITH CURRENT MARINE DATA INFRASTRUCTURE

The respondents were asked about the barriers to data use identified in the roadmap[6].

1. Discovery of Data - obtaining an overview of what data are available in a particular region.

2. Access to data. Those holding the data may not release them either because of confidentiality or security constraints, because they do not or cannot allocate sufficient resources for archiving and maintaining data or because they wish to retain a monopoly of products derived from the data.

3. Use of data. Even where data are available, their use or re-use may be limited by the data policy of the owner.

4. Cost of data. The prices imposed by some data-owners

5. Coherence of Data. Developing a complete picture in time and space over a sea-area using data collected by different bodies is complicated by fragmented standards, formats and nomenclature.

6. Quality of Data. There are no universally-recognised measures of quality, precision or accuracy. Metadata documentation may be sparse or inadequate so potential users do not know what confidence to ascribe to the data.

7. Quantity of Data. At present there is not enough data being observed to meet many user requirements. There are serious gaps in coverage and range of data types.

The replies indicated that very few users were satisfied with the status quo and agreed that these were indeed barriers. The greatest barriers were discovery (finding the data) and coherence which 50% of respondents felt were severe barriers.

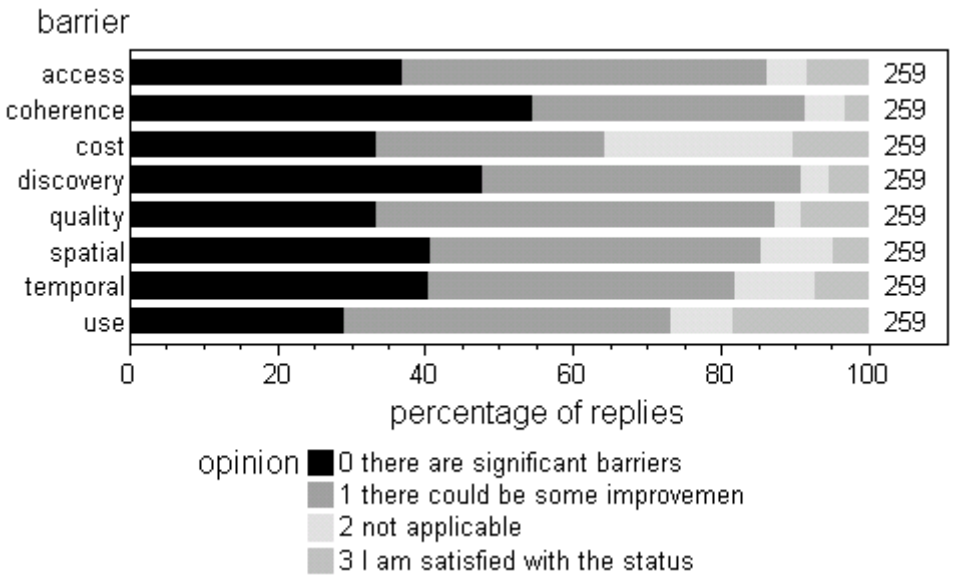


Figure 2 perceptions of current marine data infrastructure. The question concerning "quantity" is divided between spatial and temporal resolution (ie do we sample at enough places and frequently enough?)

The trends are relatively uniform for the different types of data-user (Figure 3)

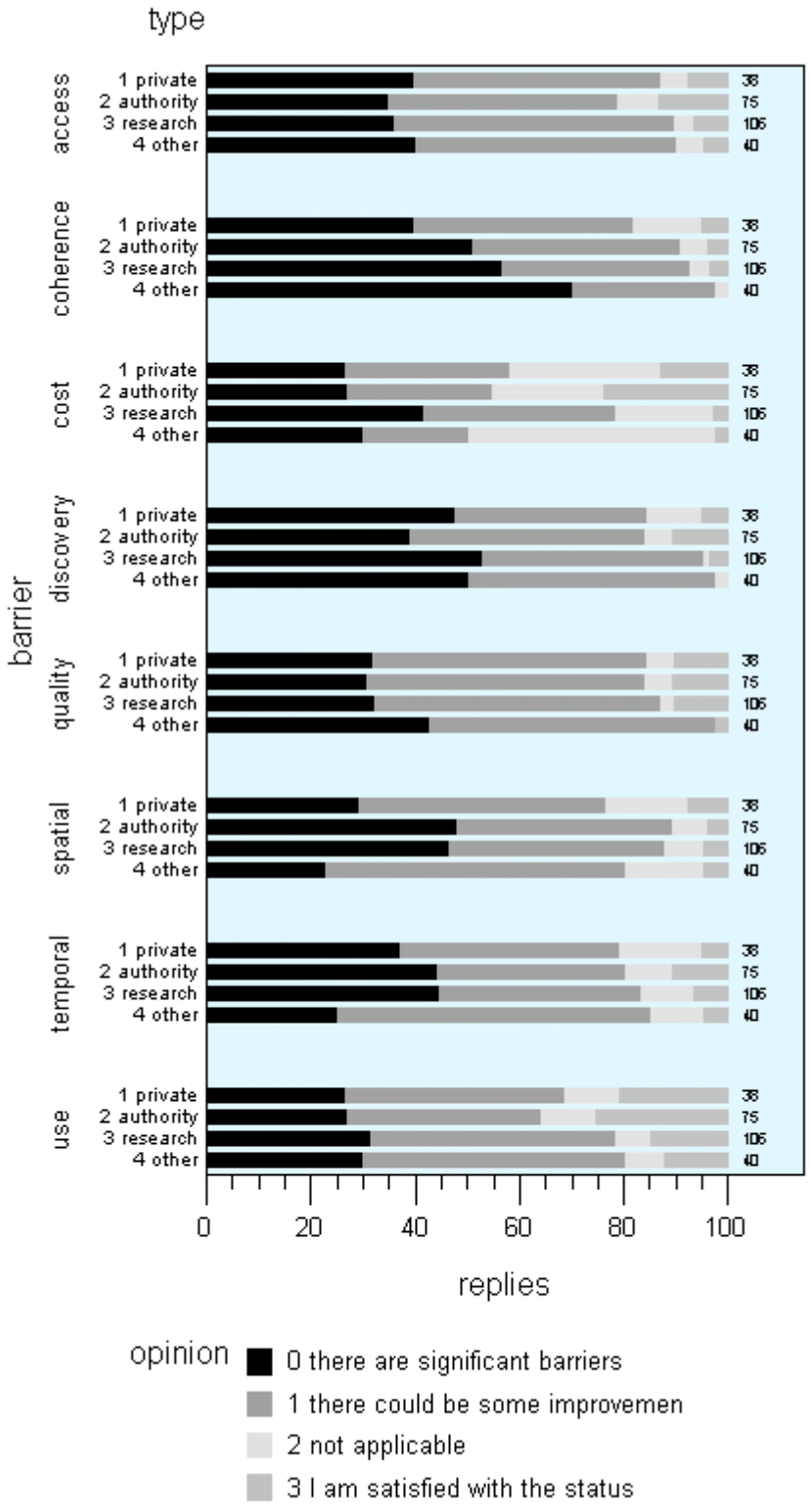


Figure 3 perceptions of current marine data infrastructure for different categories of data uses Figures on right hand side of bar charts indicate number of stakeholders

Certain stakeholders justified their remarks. These comments are included in the annex. Some comments are reproduced below to illustrate some of the points made including minority opinions.

A German respondent from a public research organisation noted that:

> *Data has to be freely available, otherwise it is not used and is therefore of no use. American data policy is light years better than EU policies. While "Europe" is sending one satellite after the other into the orbit their data is mainly validated with in-situ data in American waters. The ratio of satellite papers dedicated to American or European waters is at least 10:1. Reason: EU in-situ data policies.*

An international organisation involved in providing scientific advice thought that the importance of good quality data is not given sufficient emphasis.

> *That the role of data standards harmonisation and data quality is often underplayed in projects involving data collection or acquisition and it should be placed on an equal footing with other work package tasks that often attract more funding. All data monitoring and collection activities should have an intrinsic data strategy that addresses data policy, ownership, stewardship and availability of the data after the lifetime of the funded data collection exercise.*

Although the EU has made progress on access to fisheries data through the revised Data Collection Regulation, a German fisheries research institute suggested:

> *In relation to certain fisheries data (fleets, VMS, economics) accessibility to data for academic purposes is still limited due to confidentiality reasons. EU should encourage Member States to open data policy in this field and help developing strategies that overcome confidentiality concerns.*

The unequal spatial distribution of data was raised by a Finnish university.

> *Hopefully this effort would help in more equal spatial monitoring scheme. Basins such as Bothnian Sea are under represented, perhaps due to lack of a research station or such on its shores.*

An employee of a medium enterprise in Spain reported that:

> *It is currently extremely difficult to work towards a comprehensive and excellent environmental impact assessment in the coastal and marine zone, because of the lack of existing data/good quality data.*

And a Greek research organisation pointed out:

> *[European Space Agency] ESA satellite data should be more available. Current methods of data acquisition take far too long.*

A non-governmental organisation is currently working to compile input on the maritime/cultural resources of the European maritime and fluvial states. They pointed out that:

> *A high proportion of historic and traditional vessels preserved in Europe are in private ownership and collection of information is an uncertain*

process. We welcome any contribution which the Atlas can make to making this cultural resource more accessible, and more widely used.

The vast majority of comments listed in Annex 1 declared their unhappiness with the status quo. The only countercurrent replies came from a UK government-owned body:

The EU should support existing institutions e.g. hydrographic offices and initiatives e.g. SeaZone and not ignore or attempt to compete with them. These initiatives are already providing users the data and information they require, and are prepared to pay for, or obtain under wider agreement e.g. to education and research. Revenues generated by off-the-shelf data products provide a sustainable supply of improving data and help ensure user needs are being met.

And from a Swedish research institute:

The initial description of problems in marine data exchange do not reflect our current experiences in Sweden, or the Baltic Area, where high quality oceanographic data are generally freely available.

4. PRINCIPLES FOR A BETTER MARINE INFRASTRUCTURE

4.1. The eight principles

The roadmap identified 8 principles for a sustainable marine data infrastructure. Stakeholders were asked their opinion on these principles.

1 provide sustainable financing at an EU level

1. interoperability - develop standards across disciplines as well as within them

2. multi-use collect data once and use it many times

3. provide free- data - discourage cost-recovery pricing from public bodies.

4. accompany data with statements on ownership, accuracy and precision

Agreement on the other three was also strong but somewhat lower. Approximately 40% strongly agreed and 80% in total agreed with the following principles.

5. process data at sea-basin level

6. build on existing efforts

7. develop a decision-making process for priorities that is user-driven

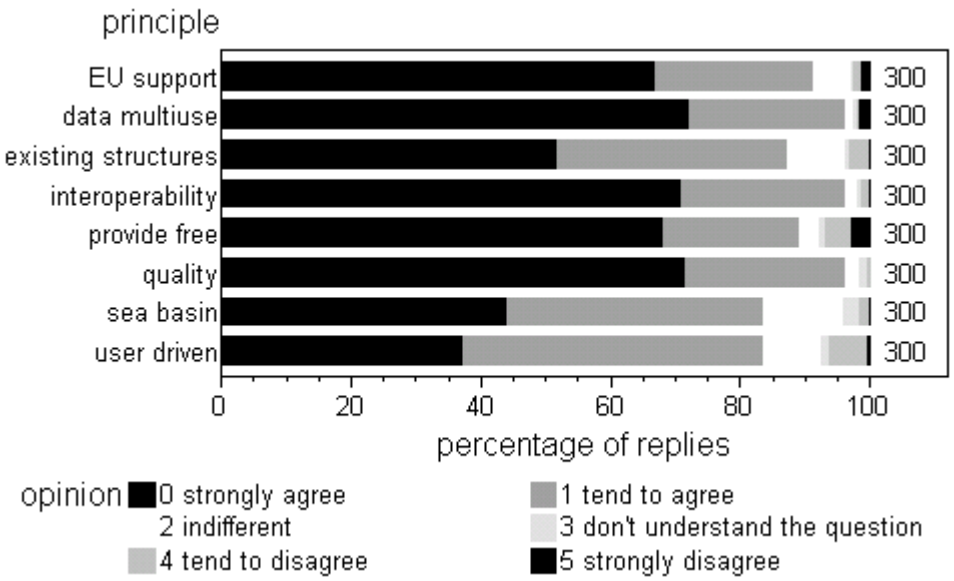


Figure 4 opinion on principles for EU marine data infrastructure expressed in roadmap.

Figure 5 shows the opinion of the different categories of stakeholder. Again there is little difference between the different groups although the private bodies are slightly less inclined to believe that EMODnet should be built on existing structures or that EU support was necessary for progress to be made. They are, however, steadfast in their belief that publicly-funded data should not be charged for.

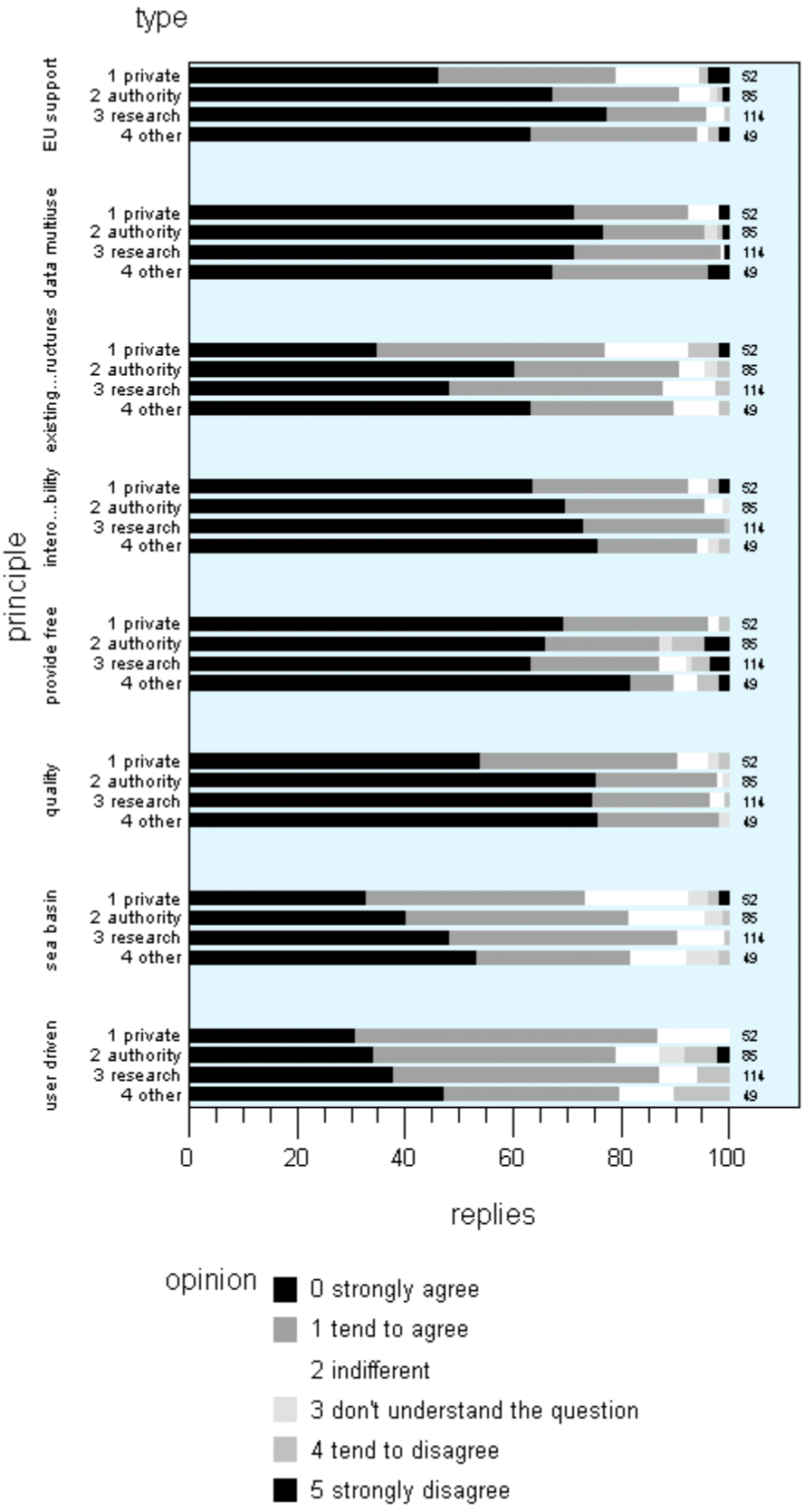


Figure 5 opinion on principles for EU marine data infrastructure expressed in roadmap - broken down by type of stakeholder

4.2. Quality checking

There were a number of remarks about quality. The secretariat of a body responsible for coordinating activities between different countries to protect a sea:

> *Quality of data and reporting of data to data centers are still the bottleneck in data management*

And a British public body responsible for management of marine data cautioned that:

> *Care is needed to ensure that quality controlled data is made available with appropriate metadata and other information - or if real-time unchecked data are made available, they should be flagged with a health warning.*

which is consistent with the EMODnet principles.

4.3. Existing Bodies

There was a large consensus amongst respondents that EMODnet should make use of existing organisational structures. Only 3.7% of those questioned thought it should not.

The respondents were than asked which existing organisations could lay a foundation for EMODnet. The complete answers are given in annex 2.

Many named themselves or their national data centres (British Oceanic Data Centre and Ifremer were mentioned more than once). ICES was named by those involved with fisheries or biological data.

HELCOM was mentioned three times, the Black Sea Commission twice and OSPAR once. Since some of these mentions were self-references, it suggests that the marine conventions are not seen as natural hubs for EMODnet. It was also suggested that EMODnet should build on the results of European research projects such as SeaDataNet or PANGAEA.

The wide variety of replies, primarily from public bodies, indicates that there is no obvious existing body that stakeholders feel is ready to take on a leadership role. Most stakeholders do not want an infrastructure that is thrust upon them but rather want to participate actively.

The complete list of replies to this question is provided as annex 2.

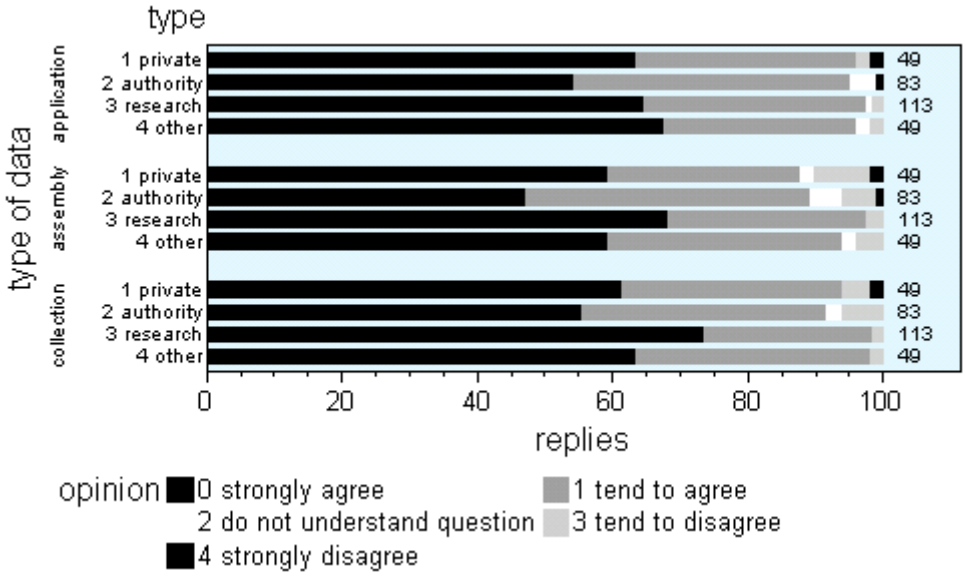
4.4. What should EU do?

The respondents were asked what EU activities should be supported.

1. collection - The EU should contribute towards the collection of marine data (over and above the fisheries data and space-based data which are already supported)

2. assembly - The EU should support the assembly and quality checking of marine data at a sea-basin scale in order to facilitate discovery and access of coherent data and to highlight the completeness and consistency of the monitoring networks

3. application - The EU should support the production or parameters or indicators based on the coherent sea-basin data that can directly contribute towards the maritime economy, coastal communities or the marine environment - tsunami warnings, wind-farm suitability, fish spawning grounds, species extinction risk etc.



The respondents therefore support EU activity in all phases of marine data processing. Some of them explained their priorities.

For a Polish marine research institute.

> *Implementation of programme to deliver high resolution bathymetry (MBES) should be more emphasized and put as highest priority*

Bodies speaking for the European marine science and operational oceanography community were concerned that EMODnet has been focusing too much on assembling existing information, where it is easy to make a business case, and not enough on extending monitoring networks, where it is harder

> *To a large extent, the present observing system is based on research funding while only very few components are operationally secured by long-term commitments from the National Agencies. Components of the global observing system such as the ARGO programme, time series stations and satellite observations, which allow observation and forecasting for the marine environment, are currently supported by research funding. The Marine Board and EuroGOOS would, therefore, advocate for an urgent transition from research to sustained operational mode of the present (and future) observing systems. The meteorological community or the Common Fisheries Policy arrangements, where Member States and the EU share responsibilities, are successful examples of such transitions.*

The reply from a national oceanographic centre thought that the private sector's data archives should not be neglected.

The roadmap is very strong on data issues, but not strong enough on the need to gather observations. Marine spatial planning requires a greater density of observations. The private sector also has a large resource of marine data which should be available for planning purposes.

Indeed a Greek public research organisation had a similar opinion:

EMODnet should not only focus on the data management aspect only but on the need to have an adequate and coherent observing system in place. While the open sea (or climate) component of GOOS has been developed well, this is not the case for shelf and coastal seas. Additional investments must be made by Europe (centrally) and in the same time the EU must make efforts to commit Member States to build and sustain a proper observing system (similar to what is done for the fisheries policy).

Some were more specific as to what part of the data collection infrastructure could be supported by the EU. From three German public research organisations:

The EU should set up longer-term funding schemes for time-series observations, which are so necessary to monitor climate change. If these data are as important as is stated everywhere, then why is it so difficult to find the appropriate funding schemes. This is particularly difficult, as this is not about the development of new technology and methods which are often the targets of funding schemes. But in terms of global change such data are necessary, particularly in the Arctic.

EU should focus on the support of observing networks which are beyond national interest to assure the global view on ocean conditions.

Funding is needed for vessel infrastructure to allow the near-real time maintenance and recovery of in-situ observing platforms. Funding structure should support long-term research activities to become more useful and better integrated into operational services. Long-Term Ecosystem Research (LTER) sites at selected locations should be closely connected to subregional and regional observatories and also funded over decades.

And from an Italian public research body

Besides the marine data infrastructure, it is very important that the EU maintains its role in supporting the Europe's marine observation system and its improvement, promoting also the utilization and development of complementary advanced technologies.

Two separate bodies (from Germany and Italy) suggested supporting the EuroArgo programme.

But not all thought that EMODnet should confine itself to harmonisation across borders and observation in international waters. A UK public agency thought:

Definitive and authoritative data and information are required. EMODnet can focus on providing support to member states to develop their national mapping programmes. EMODnet could assist in

developing national data centres (such as the marine Data Archive Centres in the UK) so that they have the wherewithal to store commercial and government data and develop these into fit-for-purpose, authoritative geological, habitat, and heritage maps and models to underpin planning and sustainable development across the European Seas.

5. ROBUSTNESS OF THE ANSWERS

In order to check the validity of the replies received, an analysis was made of confidence limits (see annex 5). This suggests that with a confidence of 90%, the findings in this report concerning difficulties with the current infrastructure are valid to a precision of at most ±15% and for those concerning the proposed principles for a better infrastructure by at most ±10%. In other words, if the questionnaire had been answered by all those working with marine data instead of a sample of 300, the conclusions would not have been different.

6. SUGGESTIONS

Respondents were given the opportunity to criticise the EMODnet roadmap and to provide suggestions as to how a European Marine Observation and Data Network could operate. A full set of comments are provided as annex 3 and annex 4 which are summarised below:

A French research organisation pointed out

it is important to have a regional analysis of the adequacy of the observing system (…) Then, you can put priority on new data acquisition or on a better use [of] the existing ones.

Despite some efforts, the Commission has still not clarified how all its initiatives are related: Two UK bodies responsible for environmental protection and nature conservation on a national scale thought.

Table 1 and Figure 1[of the EMODnet roadmap] should be expanded to include all of the initiatives listed in section 6: SEIS, GMES, European Atlas of the Seas, GEO/GEOSS. Despite a reasonable understanding of these initiatives, it is still very difficult to see how they link together.

The roadmap is not clear enough about how the various EU initiatives on marine data will link and work together, i.e. GMES, Marine-WISE.

A Croatian body pointed out:

Firstly precise goals (problems to be solved) should be defined. Secondly. only after precise goals were defined the identification, collection, processing, analysis and interpretation of data should be done. Under no circumstances (…) should be implemented in reverse order.

Which is sound advice except that defining these precise goals might take some time and stopping ongoing observation programme would damage their essential

continuity. However it is clearly a longer term objective to tailor the monitoring programme to user needs. The main difficulty in achieving this objective is that it is very difficult to achieve a complete overview of what is being monitored now and/or what users need. EMODnet should help to provide this information.

7. CONCLUSIONS AND NEXT STEPS

The consultation indicates a widespread dissatisfaction with the current marine data infrastructure amongst professionals who need to process marine data in both the public and private sector. Those consulted endorsed an EU role in improving matters.

The detailed findings from this consultation fed into the impact assessment that was presented to the Commission's Impact Assessment Board in October 2009. The assessment analysed options for a Marine Observation and Data Network. The results of the impact assessment will be taken into account in preparations for a Communication on Marine Knowledge that will be presented in early 2010. Some of the stakeholders indicated that they wanted an overall view of how the different EU initiatives fit together – not just EMODnet. The recommendation will be taken on board in the Communication.

ANNEX 1 COMPLETE ANSWERS TO QUESTIONNAIRE

Response statistics for Marine Knowledge Infrastructure			
Status : Active			
Date open : 2009-04-07			
End date : 2009-06-02			
There are 300 responses matching your criteria of a total of 300 records in the current set of data.			
Search criteria			
All data requested			
Who are you?			
You can either reply in a personal capacity or on behalf of your organisation			
	Number of requested records	% Requested records	% of total number records
I am replying in a personal capacity on the basis of my personal working experience within an organisation or administration (you are not obliged to name the organisation)	139	(46.3%)	(46.3%)
I am replying on behalf of organisation	125	(41.7%)	(41.7%)
I am replying in a personal capacity on the basis of my general awareness of marine issues rather than my present particular responsibilities	36	(12%)	(12%)
If you work on sharks in a marine conservation department in a national environment agency then your answers will depend on whether you are looking from a personal, departmental or organisational viewpoint. From what viewpoint are you answering?			
	Number of requested records	% Requested records	% of total number records
own work	85	(61.2%)	(28.3%)
department	38	(27.3%)	(12.7%)
whole organisation	16	(11.5%)	(5.3%)

Who do you work for or represent?			
	Number of requested records	% Requested records	% of total number records
public research institution	77	(25.7%)	(25.7%)
national government	67	(22.3%)	(22.3%)
university	31	(10.3%)	(10.3%)
international body	23	(7.7%)	(7.7%)
local government	18	(6%)	(6%)
large enterprise (more than 250 employees)	12	(4%)	(4%)
self-employed	11	(3.7%)	(3.7%)
none of these	10	(3.3%)	(3.3%)
industrial interest group	9	(3%)	(3%)
micro enterprise (less than 10 employees)	9	(3%)	(3%)
private research institution	9	(3%)	(3%)
civil society, environmental group, charity	8	(2.7%)	(2.7%)
medium enterprise (between 50 and 250 employees)	7	(2.3%)	(2.3%)
small enterprise (between 10 and 50 employees)	5	(1.7%)	(1.7%)
EU project	4	(1.3%)	(1.3%)

Where are you mainly based? Where are you or your organisation located? (for regional administrations). From which country is the region you represent?			
	Number of requested records	% Requested records	% of total number records
United Kingdom	37	(12.3%)	(12.3%)
Italy	32	(10.7%)	(10.7%)
Spain	23	(7.7%)	(7.7%)
Germany	19	(6.3%)	(6.3%)
European organisation or project	18	(6%)	(6%)
France	18	(6%)	(6%)
International organisation	16	(5.3%)	(5.3%)
Norway	16	(5.3%)	(5.3%)
Ireland	15	(5%)	(5%)
Portugal	15	(5%)	(5%)
Other	11	(3.7%)	(3.7%)
Netherlands	10	(3.3%)	(3.3%)
Greece	9	(3%)	(3%)
Sweden	9	(3%)	(3%)
Denmark	8	(2.7%)	(2.7%)
Finland	7	(2.3%)	(2.3%)
Turkey	6	(2%)	(2%)
Poland	5	(1.7%)	(1.7%)
Belgium	4	(1.3%)	(1.3%)
Bulgaria	3	(1%)	(1%)
Cyprus	3	(1%)	(1%)
Iceland	3	(1%)	(1%)
Malta	3	(1%)	(1%)
Croatia	2	(0.7%)	(0.7%)
Latvia	2	(0.7%)	(0.7%)
Austria	1	(0.3%)	(0.3%)
Estonia	1	(0.3%)	(0.3%)
Lithuania	1	(0.3%)	(0.3%)
Luxembourg	1	(0.3%)	(0.3%)
Romania	1	(0.3%)	(0.3%)
Slovenia	1	(0.3%)	(0.3%)
Czech Republic	0	(0%)	(0%)
Hungary	0	(0%)	(0%)
Slovakia	0	(0%)	(0%)

Is a marine knowledge infrastructure relevant to your work?			
	Number of requested records	% Requested records	% of total number records
Yes	295	(98.3%)	(98.3%)
No	5	(1.7%)	(1.7%)

Which European seas are you most directly interested in (you can indicate up to six)?			
	Number of requested records	% Requested records	% of total number records
North-East Atlantic	136	(45.3%)	(45.3%)
Greater North Sea, including the Kattegat, and the English Channel	117	(39%)	(39%)
Western Mediterranean Sea	105	(35%)	(35%)
Baltic Sea	88	(29.3%)	(29.3%)
West of Scotland, Irish Sea, Celtic Seas	78	(26%)	(26%)
Arctic Ocean (including Barents Sea and Greenland Sea)	69	(23%)	(23%)
Ionian Sea and the Central Mediterranean Sea	65	(21.7%)	(21.7%)
Bay of Biscay and the Iberian Coast	57	(19%)	(19%)
Norwegian Sea	55	(18.3%)	(18.3%)
Adriatic Sea	48	(16%)	(16%)
Waters surrounding the Azores, Madeira and the Canary Islands	45	(15%)	(15%)
Black Sea	43	(14.3%)	(14.3%)
Aegean-Levantine Sea	34	(11.3%)	(11.3%)
Other	30	(10%)	(10%)
Which (if any) of these other seas or marine basins interests you most			
	Number of requested records	% Requested records	% of total number records
North Atlantic	159	(53%)	(53%)
general interest	87	(29%)	(29%)
Arctic	68	(22.7%)	(22.7%)
Pacific	34	(11.3%)	(11.3%)
Indian Ocean	32	(10.7%)	(10.7%)
South Atlantic	31	(10.3%)	(10.3%)
Southern Ocean	26	(8.7%)	(8.7%)
Caribbean	25	(8.3%)	(8.3%)
other	15	(5%)	(5%)
what scale are you primarily interested in (maximum of 2)?			
	Number of requested records	% Requested records	% of total number records
coastal	209	(69.7%)	(69.7%)
shelf	128	(42.7%)	(42.7%)
open ocean	125	(41.7%)	(41.7%)
estuary	41	(13.7%)	(13.7%)
question not relevant	21	(7%)	(7%)
do not understand the question	0	(0%)	(0%)

Working with marine data and observations			
Are you or your organisation directly involved with collecting, processing or using marine data and observations?			
	Number of requested records	% Requested records	% of total number records
yes	259	(86.3%)	(86.3%)
no	41	(13.7%)	(13.7%)
Why does your organisation require data and observations? (choose a minimum of 1 and a maximum of 3)			
	Number of requested records	% Requested records	% of total number records
to provide advice for marine management (eg fisheries catch limits)	136	(52.5%)	(45.3%)
to understand the behaviour of the planet	96	(37.1%)	(32%)
to inform the public	81	(31.3%)	(27%)
for coastal protection	76	(29.3%)	(25.3%)
to support new developments (eg harbours, wind farms, aquaculture)	74	(28.6%)	(24.7%)
to exploit resources - fisheries, petroleum, aggregates	52	(20.1%)	(17.3%)
to support a regulatory requirement (eg clean beaches)	51	(19.7%)	(17%)
safe navigation	43	(16.6%)	(14.3%)
for teaching students	33	(12.7%)	(11%)
for national defence	9	(3.5%)	(3%)
none of these	8	(3.1%)	(2.7%)
to promote or support tourism	5	(1.9%)	(1.7%)
What phases of data processing are you (or your organisation if you are replying on behalf of them) involved with - you can choose more than one?			
	Number of requested records	% Requested records	% of total number records
collecting data	199	(76.8%)	(66.3%)
using data for a particular application	195	(75.3%)	(65%)
processing data for intermediate users	154	(59.5%)	(51.3%)
question is not relevant	9	(3.5%)	(3%)
none	5	(1.9%)	(1.7%)

How soon after a measurement or observation are data required? If you require data at different times then select the fastest.			
	Number of requested records	% Requested records	% of total number records
immediately (near real-time)	79	(30.5%)	(26.3%)
months	70	(27%)	(23.3%)
weeks	56	(21.6%)	(18.7%)
days	27	(10.4%)	(9%)
years	14	(5.4%)	(4.7%)
hours	13	(5%)	(4.3%)
What products do you deliver to the end-user or customer			
	Number of requested records	% Requested records	% of total number records
scientific reports	176	(68%)	(58.7%)
maps	156	(60.2%)	(52%)
trends	121	(46.7%)	(40.3%)
raw data	113	(43.6%)	(37.7%)
indicators	108	(41.7%)	(36%)
other	31	(12%)	(10.3%)
question is not clear	6	(2.3%)	(2%)
bathymetric data (water depth, digital terrain data)			
	Number of requested records	% Requested records	% of total number records
required	173	(66.8%)	(57.7%)
useful	65	(25.1%)	(21.7%)
not required	21	(8.1%)	(7%)
meteorological data (wind, air temperature)			
	Number of requested records	% Requested records	% of total number records
required	126	(48.6%)	(42%)
useful	104	(40.2%)	(34.7%)
not required	29	(11.2%)	(9.7%)
other physical data (temperature, current, salinity, waves, tides)			
	Number of requested records	% Requested records	% of total number records
required	173	(66.8%)	(57.7%)
useful	66	(25.5%)	(22%)
not required	20	(7.7%)	(6.7%)
geology, sediments, geohazards, strata, sea-floor habitats			
	Number of requested records	% Requested records	% of total number records
required	116	(44.8%)	(38.7%)

useful	93	(35.9%)	(31%)
not required	50	(19.3%)	(16.7%)
chemicals			
	Number of requested records	% Requested records	% of total number records
useful	97	(37.5%)	(32.3%)
required	88	(34%)	(29.3%)
not required	74	(28.6%)	(24.7%)
biology, speciation, biodiversity (except for fish)			
	Number of requested records	% Requested records	% of total number records
required	132	(51%)	(44%)
useful	70	(27%)	(23.3%)
not required	57	(22%)	(19%)
fisheries data - landings, effort, size, age etc			
	Number of requested records	% Requested records	% of total number records
required	90	(34.7%)	(30%)
not required	90	(34.7%)	(30%)
useful	79	(30.5%)	(26.3%)
human activity (except fishing), gravel extraction, petroleum, renewable energy, aquaculture etc			
	Number of requested records	% Requested records	% of total number records
useful	110	(42.5%)	(36.7%)
required	99	(38.2%)	(33%)
not required	50	(19.3%)	(16.7%)
Discovery: can you find all the data you need easily or does it take a lot of effort to find who holds the data?			
	Number of requested records	% Requested records	% of total number records
there are significant barriers to efficient working	123	(47.5%)	(41%)
there could be some improvements	112	(43.2%)	(37.3%)
I am satisfied with the status quo	14	(5.4%)	(4.7%)
not applicable	10	(3.9%)	(3.3%)
Access: do organisations holding the data provide it to you willingly			
	Number of requested records	% Requested records	% of total number records
there could be some improvements	128	(49.4%)	(42.7%)

there are significant barriers to efficient working	95	(36.7%)	(31.7%)
I am satisfied with the status quo	22	(8.5%)	(7.3%)
not applicable	14	(5.4%)	(4.7%)
Use: are you allowed to use the data for whatever purposes you want or are you restricted to certain uses?			
	Number of requested records	% Requested records	% of total number records
there could be some improvements	114	(44%)	(38%)
there are significant barriers to efficient working	75	(29%)	(25%)
I am satisfied with the status quo	48	(18.5%)	(16%)
not applicable	22	(8.5%)	(7.3%)
Is your budget sufficient to pay for the data you need?			
	Number of requested records	% Requested records	% of total number records
there are significant barriers to efficient working	86	(33.2%)	(28.7%)
there could be some improvements	80	(30.9%)	(26.7%)
not applicable	66	(25.5%)	(22%)
I am satisfied with the status quo	27	(10.4%)	(9%)
Coherence: are marine data sufficiently interoperable? is it straightforward to mix and match data from different laboratories, different countries or different disciplines?			
	Number of requested records	% Requested records	% of total number records
there are significant barriers to efficient working	141	(54.4%)	(47%)
there could be some improvements	95	(36.7%)	(31.7%)
not applicable	14	(5.4%)	(4.7%)
I am satisfied with the status quo	9	(3.5%)	(3%)
Quality: do you have enough information about the quality (accuracy and precision) of the data you use?			
	Number of requested records	% Requested records	% of total number records
there could be some improvements	140	(54.1%)	(46.7%)
there are significant barriers to efficient working	86	(33.2%)	(28.7%)
I am satisfied with the status quo	24	(9.3%)	(8%)
not applicable	9	(3.5%)	(3%)

Temporal resolution: The sampling is sufficient. More frequent sampling would not improve accuracy.			
	Number of requested records	% Requested records	% of total number records
there could be some improvements	108	(41.7%)	(36%)
there are significant barriers to efficient working	104	(40.2%)	(34.7%)
not applicable	28	(10.8%)	(9.3%)
I am satisfied with the status quo	19	(7.3%)	(6.3%)
Spatial resolution: Spatial resolution is sufficient. A finer spatial resolution would not improve the accuracy of your work?			
	Number of requested records	% Requested records	% of total number records
there could be some improvements	116	(44.8%)	(38.7%)
there are significant barriers to efficient working	105	(40.5%)	(35%)
not applicable	25	(9.7%)	(8.3%)
I am satisfied with the status quo	13	(5%)	(4.3%)
Design of Marine Data Infrastructure			
Data should be collected bearing in mind that it can be used for many purposes?			
	Number of requested records	% Requested records	% of total number records
strongly agree	216	(72%)	(72%)
tend to agree	72	(24%)	(24%)
strongly disagree	5	(1.7%)	(1.7%)
indifferent	4	(1.3%)	(1.3%)
don't understand the question	2	(0.7%)	(0.7%)
tend to disagree	1	(0.3%)	(0.3%)
Interoperable standards, formats and nomenclatures across borders and across disciplines should be developed			
	Number of requested records	% Requested records	% of total number records
strongly agree	212	(70.7%)	(70.7%)
tend to agree	76	(25.3%)	(25.3%)
indifferent	6	(2%)	(2%)
tend to disagree	3	(1%)	(1%)
don't understand the question	2	(0.7%)	(0.7%)
strongly disagree	1	(0.3%)	(0.3%)
Specific action is needed at sea-basin level to check sampling, coherence and quality. For instance to produce gridded data.			
	Number of requested records	% Requested records	% of total number records
strongly agree	132	(44%)	(44%)

tend to agree	118	(39.3%)	(39.3%)
indifferent	37	(12.3%)	(12.3%)
don't understand the question	8	(2.7%)	(2.7%)
tend to disagree	4	(1.3%)	(1.3%)
strongly disagree	1	(0.3%)	(0.3%)
Without sustainable financial support from the EU, it will be extremely difficult to build up a sustainable European infrastructure			
	Number of requested records	% Requested records	% of total number records
strongly agree	200	(66.7%)	(66.7%)
tend to agree	73	(24.3%)	(24.3%)
indifferent	18	(6%)	(6%)
tend to disagree	4	(1.3%)	(1.3%)
strongly disagree	4	(1.3%)	(1.3%)
don't understand the question	1	(0.3%)	(0.3%)
The priorities for a European Marine Data and Observation Network in terms of the particular types of data being made available should be defined by the users.			
	Number of requested records	% Requested records	% of total number records
tend to agree	139	(46.3%)	(46.3%)
strongly agree	111	(37%)	(37%)
indifferent	27	(9%)	(9%)
tend to disagree	17	(5.7%)	(5.7%)
don't understand the question	4	(1.3%)	(1.3%)
strongly disagree	2	(0.7%)	(0.7%)
It is important that an operational European and Marine Observation and Data Network builds on structures and organisations that already exist			
	Number of requested records	% Requested records	% of total number records
strongly agree	155	(51.7%)	(51.7%)
tend to agree	106	(35.3%)	(35.3%)
indifferent	27	(9%)	(9%)
tend to disagree	9	(3%)	(3%)
don't understand the question	2	(0.7%)	(0.7%)
strongly disagree	1	(0.3%)	(0.3%)
Data should be accompanied by indications of of ownership, accuracy and precision			
	Number of requested records	% Requested records	% of total number records
strongly agree	214	(71.3%)	(71.3%)
tend to agree	74	(24.7%)	(24.7%)
indifferent	7	(2.3%)	(2.3%)
don't understand the question	3	(1%)	(1%)
tend to disagree	2	(0.7%)	(0.7%)
strongly disagree	0	(0%)	(0%)

Data collected using public funding should be freely available at marginal cost to all other public and private bodies.			
	Number of requested records	% Requested records	% of total number records
strongly agree	204	(68%)	(68%)
tend to agree	63	(21%)	(21%)
tend to disagree	12	(4%)	(4%)
indifferent	9	(3%)	(3%)
strongly disagree	9	(3%)	(3%)
don't understand the question	3	(1%)	(1%)

Roadmap			

Have you read the Commission Staff Working Document "Building a European marine knowledge infrastructure: Roadmap for a European Marine Observation and Data Nework" http://ec.europa.eu/maritimeaffairs/pdf/roadmap_emodnet_en.pdf			
	Number of requested records	% Requested records	% of total number records
yes	166	(55.3%)	(55.3%)
no	136	(45.3%)	(45.3%)

Have you read the whole document or only the executive summary?			
	Number of requested records	% Requested records	% of total number records
whole document	99	(59.6%)	(33%)
executive summary only	67	(40.4%)	(22.3%)

Do you agree with this roadmap?			
	Number of requested records	% Requested records	% of total number records
tend to agree	120	(72.3%)	(40%)
strongly agree	40	(24.1%)	(13.3%)
tend to disagree	5	(3%)	(1.7%)
strongly disagree	1	(0.6%)	(0.3%)

Options for Moving Ahead			

The EU has a role in improving Europe's marine data infrastructure			
	Number of requested records	% Requested records	% of total number records
yes	294	(98%)	(98%)
no	6	(2%)	(2%)

The EU should contribute towards the collection of marine data (over and above the fisheries data and space-based data which are already supported to some extent)			
	Number of requested records	% Requested records	% of total number records
strongly agree	190	(64.6%)	(63.3%)
tend to agree	91	(31%)	(30.3%)
tend to disagree	10	(3.4%)	(3.3%)
do not understand question	2	(0.7%)	(0.7%)
strongly disagree	1	(0.3%)	(0.3%)
The EU should support the assembly and quality checking of marine data at a sea-basin scale in order to facilitate discovery and access of coherent data and to highlight the completeness and consistency of the monitoring networks			
	Number of requested records	% Requested records	% of total number records
strongly agree	174	(59.2%)	(58%)
tend to agree	99	(33.7%)	(33%)
tend to disagree	13	(4.4%)	(4.3%)
do not understand question	6	(2%)	(2%)
strongly disagree	2	(0.7%)	(0.7%)
Although, the difference in the number of reponses is probably not statistically significant, more respondents strongly agree that the EU should contribute towards the collection of data than the assembly of data			
The EU should support the production or parameters or indicators based on the coherent sea-basin data that can directly contribute towards the maritime economy, coastal communities or the marine environment - tsunami warnings, wind-farm suitability, fish spawning grounds, species extinction risk etc			
	Number of requested records	% Requested records	% of total number records
strongly agree	182	(61.9%)	(60.7%)
tend to agree	101	(34.4%)	(33.7%)
do not understand question	5	(1.7%)	(1.7%)
tend to disagree	4	(1.4%)	(1.3%)
strongly disagree	2	(0.7%)	(0.7%)

ANNEX 2 EXISTING BODIES THAT MIGHT CONTRIBUTE TO EMODNET

The submissions from the respondents have been reproduced in their entirety. Typographical errors have not been edited out. They reflect the views of the organisation or individual replying – not those of Commission staff.

	Type of organisation	Location	Existing bodies that might contribute
1	01 industrial interest group	Italy	Ministry of Infrastructures and Transportations and Maritime Affairs - Coast Guard - Ministry of Envinronment
2		Netherlands	EMSA
3		Portugal	Ocean Matters Portugal, Instituto Hidrografico, IMAR, IPIMAR, and others.
4		United Kingdom	Organisations are not so important - need a simple fron t end portal to allow data to be submitted and to facilitate access to existing data.
5	02 large enterprise (more than 250 employees)	France	MyOcean for distributed real time access Seadatanet for ocean patrimony holding
6		Other	Regioanal
7	03 medium enterprise (between 50 and 250 employees)	Other	Pemex
8		Portugal	National data hub
9		Spain	Universities, Agencies, Scientific Centres, NGOs. etc...
10	04 small enterprise (between 10 and 50 employees)	United Kingdom	National (member state) hydrographic offices, surveys and other institutions already provide a range of data users require. SeaZone Solutions Limited aggregates this information to provide marine geographic information, software and services to a growing
11	05 micro enterprise (less than 10 employees)	Ireland	We collect high frequency, medium to long-term data in realtime for ourselves and on behalf of clients for research and operational applications - we have little use for historical data
12		Ireland	We primarily serve our own in house collected data to our clinets. When we need more information we have used projects such as Mersea, ECOOP and now Myocean of which we are partners, notably involved in the data management/dissemination end of things.
13		United Kingdom	???
14	06 self-employed	France	Coriolis data Centre
15		France	IFREMER (French Institution for research and exploitation of the seas)

	Type of organisation	Location	Existing bodies that might contribute
16		Netherlands	EUCC Coastal & Marine Union; Royal Navy; GREC (Le Groupe de Recherche sur les Cétacés en Méditerranée, en Polynésie ou ailleurs dans le monde);
17		Netherlands	NO IDEA
18		Norway	Drewry Shipping Consultants, London
19	07 local government	France	IFREMER University of Caen
20		France	Local governments
21		Ireland	Marine irnstitute ireland Coastal research management Centre University College Cork
22		Italy	In Italy: ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale) CNR-IAMC (Istituto per l'ambiente marino costiero) Stazione Zoologica di Napoli "Anton Dohrn"
23		Italy	Region
24		Netherlands	ministries and research centres
25		Portugal	University of the Azores
26		United Kingdom	Local Authorities
27	08 national government	Bulgaria	Institute of oceanology - Bulgarian Academy of Sciences Marine Navy Academy Executive Agency of fishery and aquaculture Bulgarian Maritime Administration - Ministry of Transport Agency of cadastre - Ministry of Regional Development and public works
28		Denmark	EuroGOOS
29		Denmark	International Hydrographic Organisation (IHO) Primar
30		Finland	The national land survey of Finland (most important provider - now with significant barriers in terms of high prices for data, rigorous immaterial rights claims and restrictions for data use), reserach institutes (the Geological Survey of Finland, in part
31		France	IFREMER,CETMEF, BRGM,METEO FRANCE
32		Germany	EuroGOOS
33		Germany	ICES for all kind of biology, oceanography and fisheries data in the Northeast Atlantic
34		Italy	no
35		Netherlands	Imares
36		Netherlands	Rijkswaterstaat, TNO, BODC, IFREMER
37		Norway	Geological Survey of Norway, NERC..
38		Norway	Institute of Marine Research (Norway) Norwegian Institute for Water Research - NIVA (Norway)
39		Norway	Our Service is the most relevant body for management and distribution of bathymetric data and permanent water level observations.
40		Sweden	Please look at the organisation of genetik and molecular biology data accession number to the data base compulsary for any kind of publication. You can not publish if the data is not added to the data base.

	Type of organisation	Location	Existing bodies that might contribute
41		Sweden	SeaDataNet, ICES, SMHI
42		Sweden	Swedish Meteorological and Hydrological Institute, Swedish Geological Survey,
43		United Kingdom	Defra runs a data hub (SPIRE) on behalf of the Defra network. SPIRE currently provides spatial datasets to stakeholders across the Defra network to publish data for INSPIRE purposes. It could potentially be used as part of a marine data infrastructure
44		United Kingdom	National Institutes, ICES,
45		United Kingdom	The UK marine monitoring and assessment strategy encompasses several UK bodies involved in this area and is developing various data sharing protocols and agreements.
46		United Kingdom	UKHO is working closely with MEDIN on this. All of MEDINs work is aimed at increasing interoperability and wider availability of marine data.
47	09 public research institution	Croatia	Regional data hub does not exist.
48		France	An infrastructure part of the network of World Data Centers, such as WDC-MARE, NODC
49		France	Coriolis data centre, GMES Marine Core Service in-situ Thematic Assembly Center
50		France	IHO, and its Hydrographic Offices
51		France	Marine data centres within SEADATANET project, Thematic Assembly Centre-In Situ within MyOcean project,
52		Germany	Alfred Wegener Institute for Polar & Marine Research, PANGAEA data base is laready used for data produced in EU-funded projects, e.g. HERMES, HERMIONE
53		Germany	Alfred Wegener Institute with WDC-MARE and the PANGAEA Information System holding any kind of earth system research data, most from the oceans.
54		Germany	BSH (German Federal Maritime and Hydrographic Agency) as a regional hub for German monitoring data
55		Germany	Federal Maritime and Navgational Agency Germany (BSH)
56		Germany	ICES, Copenhagen EEA, Copenhagen National Marine Agencies, e.g. BSH in Hamburg (regional data hub) A European Marine Data Centre (disciplinary hub)
57		Germany	World Data Centers
58		Germany	e.g. ICES for oceanographic and biological data in the North Atlantic
59		Greece	EU DG Maritime Affairs GFCM FAO ICCAT
60		Greece	National Operational Oceanography Data Centers or NODCs with regional mandate. The Regional Ocean Observing Systems (ROOS) of EuroGOOS should play a coordinating role on that.

	Type of organisation	Location	Existing bodies that might contribute
61		Ireland	ICES (Fisheries and Marine Environmental)
62		Ireland	Regional data hub: ISDE (Irish Spatial Data Exchange) - an umbrella group incorporating: Marine Institute, Environmental Protection Agency, Geological Survey of Ireland (GSI), Department of Environment Heritage and Local Government.
63		Italy	MOON Thematic Data Centers for different components of the Mediterranean Sea observing system: 1) Med-VOS and Med-SOOP 2) MedArgo 3) Med-M3A
64		Italy	National Research Council of Italy
65		Italy	SeaDataNet (EC project)
66		Lithuania	Leibniz Institute for Baltic Sea Research, Warnemunde Maritimi Institute in Gdansk Rostock University
67		Norway	Geological Survey of Norway Norwegian Petroleum Directorate
68		Norway	National marine datacentres, ICES Data Centre, IODE data centres, WDCs.
69		Other	IFREMER, France National Oceanographic Centre, Southampton, UK Geomar, Germany
70		Poland	ICES
71		Poland	NODCs
72		Poland	Network of National Oceanographic Data Centres
73		Portugal	ICES
74		United Kingdom	British Geological Survey - Geology British Oceanographic Data Centre - Oceanography UK Hydrographic Office - Hydrography
75		United Kingdom	British Oceanographic Data Centre (BODC) British Geological Survey (BGS) Marine Management Organisation (MMO) Marine Environmental Data Information Network (MEDIN)
76		United Kingdom	British Oceanographic Data Centre (BODC) Liverpool UK National Oceanography Centre Data Team, Southampton UK
77		United Kingdom	Data Archive Centres of the Marine Environmental Data and Information Partnership (MEDIN) - see www.oceannet.org/data_discovery_portal/ Coriolis (France)
78		United Kingdom	For geology - national level geological surveys - European level could also be arranged through EuroGeoSurveys For hydrgraphic data - the national hydrographic surveys For biology - in many countries this seems more disparate
79		United Kingdom	In the UK: Cefas, MMO, BODC
80		United Kingdom	National Oceanography Centre, Southampton Pangaea, Bremen BODC

	Type of organisation	Location	Existing bodies that might contribute
81		United Kingdom	SeaDataNet (and the upcoming Geo-Seas project) and other related projects; MarBEF/EuroOBIS; ICES (fisheries, enviromental data, e.g. for OSPAR, HELCOM; coherent temperature/salinity/nutrient dataset). Within the UK, the Marine Environmental Data and Infor
82	10 university	Finland	Finnish environmental institute, SYKE and possibly GI Center Lounaispaikka
83		Greece	European Environmental Agency
84		Ireland	Universities (e.g. UCD, NUIG) Marine Institute
85		Netherlands	FAO Commercial Fishing bodies
86		Spain	Canarian Institute of Marine Sciences er of Biodiversity and Environmental Management, University of Las Palmas de Gran Canaria Instituto Español de Oceanografia, Centro de Canarias
87		Spain	Instituto Español de Oceanografía Puertos del Estado
88		United Kingdom	NOCS is working on a Semantic Web based knowledge and data infrustructure
89	11 European project or body	European organisation or project	- European Maritime Regions
90		European organisation or project	EEA - JRC.
91		European organisation or project	European meteorological services
92		European organisation or project	ICES
93		Germany	PANGAEA
94	12 international body	Denmark	The Global Biodiversity Information Facility was established to serve as a global portal for biodiversity datasets. OBIS is the relevant global and regional thematic hub for marine data.
95		International organisation	International Oceanographic Data and Information Exchange (IODE) member data centres, or the IOC project Office for IODE, Oostende, Belgium
96		International organisation	One of HELCOM's role is to be a regional environmental information focal point. HELCOM's data and GIS portal provides access to a range of interactive map and data services (http://www.helcom.fi/GIS/en_GB/HelcomGIS/). Various databases can be viewed and
97		International organisation	One of the Regional Seas Conventions' roles is to collect and make available marine data. They could provide regional data hub.
98		International organisation	Regional data hubs (HELCOM, ICES), themed: EurObis/Obis (biogeography)

	Type of organisation	Location	Existing bodies that might contribute
99		International organisation	SISMER (France) PANGAEA - WDC MARE (Germany) BODC (UK)
100		Sweden	National Oceanographic Data Centers under IOC in regional co-operation (mainly physical, chemical and biological data). Coordinated under SeaDataNet and ROOSs. Regional Hydrographic organisations under IHO. ICES (fishery)
101		Turkey	Commission on the Protection of the Black Sea Against Pollution
102		United Kingdom	IMO IOPCF ITOPF EMSA
103	13 civil society, environmental group, charity	Bulgaria	Black Sea Commission
104		Germany	Federal Maritime and Hydrographic Agency, ship safety division of the See-Berufsgenossenschaft Federal Agency for Fishing industry
105		International organisation	ACCOBAMS, ASCOBANS and other regional Agreements
106		International organisation	British Oceanographic Data Centre (BODC) in UK
107	14 private research institution	Ireland	Geological Survey for Ireland, Marine Institute
108		Italy	Government, EC, stakeholders
109		Italy	Navy, Coast Guard, Confitarma (Confederation of Italian Shipowners)
110		Norway	IFREMER at European level NIVA at national level (coastal and fjord oceanography)
111		Other	ICES
112	15 none of these	Croatia	Mediterranean Action Plan of UNEP ICES ICSEM Black Sea Commission Permanent Secretariat
113		Norway	UNEP/GRID Arendal (e.g. multibeam)
114		United Kingdom	Seadatanet MEDIN

ANNEX 3 COMMENTS ON ROADMAP

The submissions from the respondents have been reproduced in their entirety. Typographical errors in the submission have not been edited out. They reflect the views of the organisation or individual replying – not those of Commission staff.

	Type of organisation	Location	Comments
1	01 industrial interest group	Italy	First of all these principles must be undertaken: 1) EU MS must implement a common strong policy to share each others the maritime data that can permit:Security,Safety,Development 2) EU'sMS must implement on Research Domain some important huge projects that can permit a national follow-on with greats save costs 3) To implement an unique maritime policy between all the EU MS
2		Portugal	We have a case-study in a region in Portugal, colleting all data from different entities and we are very interested to participate at an European level in a European Marine Observation and Data Network.
3	02 large enterprise (more than 250 employees)	France	Work on monitoring the needs for production (good equilbrium wrt fundings, reports on uses and usefulness (user forum, use logs), ad hoc training/education in the university cursus (more native than developping skills when having a job), training/education on tools to discover/access/visualise/manipulate the products for efficient search and use.
4		Turkey	To Long, repeating at times
5	04 small enterprise (between 10 and 50 employees)	Turkey	TURKISH GOVERNMENT, TR-ONHO, UNIVERSITIES AND PRIVITE COMPANIES SHOULD HAVE SOME COMMENTS ON ROADMAP.
6		United Kingdom	The goals of the roadmap are sound but are not new. In the UK these goals are being met by initiatives such as SeaZone and are now being exported elsewhere in Europe and worldwide. Free access to data will not ensure users get the data they need and they will not 'value' it. Product development and delivery is best left to the private sector.
7	06 self-employed	France	OK
8		France	The road map does not put enough emphasis on the Observing sytems themselves, I.e. the observing networks. There is a strong need for EU support of observing systems. There is a need to streamline the existing data infrastructures :Seadatanet, GMES - MCS, WISE-marine, EuroGoos, SEIS, WISE, ICES, EMODNET (the new kid on the block), GEOSS; IOC,JCOMMOPS ... and I must forget many !!

	Type of organisation	Location	Comments
9		United Kingdom	The report on the cost benefit of establishing EMODNET has yet to be published. It should not be assumed that its desirability, as indicated by responses to this questionnaire or previous consultations, is such that its cost is irrelevant, because it is not. There is a danger that this project it could create a demand for resources that cannot be justified by the benefits that they will create.
10	07 local government	France	It is necessary to consider data from and for local stakeholders. It's not possible to consider the marine data without the data of coastal basin to an integrated management of the coastal and maritime policies.
11		Italy	There isn't any reference to the experiences at the regional or sea basin level. The topic of the interoperability is not well developed (i.e. no mention of Interoperable standards that already exist and are used, as OGC standards).
12	08 national government	Denmark	Every effort must be made to ensure that EMODNET complements and do not "compete" with the INSPIRE Directive.
13		Finland	I strongly support this initiative! It is a bold decision which will improve life in Europe. The economical, political and functional benefits that will come out of this process are far larger than what the present situation can provide. it will create business opportunities, improve the sustainable use of marine areas and resources, protect nature, ease up the sociological tensions that now exist. I am very pleased the way things are going with this particular issue.
14		Greece	ESA satellite data should be more readily available. Current method of data acquisition take way too long.
15		Portugal	It should stress the present lack of observations and the necessary improvement of temporal and spatial resolutions.
16		Sweden	The roadmap appears to be a restatement of current activities within marine data management. The initial description of problems in marine data exchange do not reflect our current experiences in Sweden, or the Baltic Area, where high quality oceanographic data are generally freely available.
17		United Kingdom	Data licensing is an important obstacle to overcome if data is to be effectively shared between organisations. Licensing agreement have caused problems when organisations have attempted more local collaborations.
18		United Kingdom	No

	Type of organisation	Location	Comments
19		United Kingdom	Table 1 and Figure 1 should be expanded to include all of the initiatives listed in section 6: SEIS, GMES, European Atlas of the Seas, GEO/GEOSS. Despite a reasonable understanding of these initiatives, it is still very difficult to see how they link together.
20		United Kingdom	The roadmap is not clear enough about how the various EU initiatives on marine data will link and work together, i.e. GMES, Marine-WISE.
21		United Kingdom	UKHO is concerned that the underlying funding model for EMODNET is not sustainable. UKHO is a government agency and is required to produce revenue from its products and services.
22	09 public research institution	Belgium	See the joint Marine Board - EuroGOOS response (letter to Joe Borg, 02/06/09). In addition, the Marine Board would also like to stress that it is necessary: (i) To give equal emphasis to a/ in-situ data collection, b/data processing and management and c/ data/information dissemination // (ii) that pilot studies include an assessment of the actual use to which archived data is put (e.g. percentage of data accessed that is subsequently used as opposed to just being viewed.
23		Croatia	Clear goals for which data should be collected are not set. Data collection, processing, analyzes and interpretation have to be strongly related to the problems in the marine environment to be solved or mitigated.
24		France	One of the main issue is that we are lacking long term / sustained observations at the global, regional and coastal scales. We can and should improve data access and data interoperability but we mainly need to better (improved space/time sampling, long term observations) observe the oceans (this also means to set up appropriate organizations).
25		France	Recommandation to use the current networks and robust procedures in place at the level of IHO regional hydrographic commissions.
26		Germany	The main focus of the roadmap is on existing data (availability, quality etc.). However, there is a strong need for new European observation networks to be completed and build. Especially near-realtime observation platforms with model support (data assimilation) need to be build nad continuously operated. To accomplish this European task, European money for a sustainable operation under common guidelines is needed. The focus should be on biogeochemical near-realtime data that are missing!

	Type of organisation	Location	Comments
27		Germany	The roadmap should have a stronger focus on a SUSTAINABLE use of data in terms of archiving. The source for a data network are the archives. Those should be operated and organised in a similar way as mankind deals with publications - in "libraries". Part of the roadmap should describe the handling of data in terms of a "librarians thinking" - which includes CITATION and PERSISTENT IDENTIFICATION of data.
28		Ireland	An area of critical concern is the importance od adequate acquisition of ground truthed data.
29		Ireland	The Inspire directive should be the cornerstone for any implementation of marine data access policy and infrastructure. We would like to see this directive more strongly represented in the text, for example in paragraph 4.4 (nodes, portals). How do you intend to collect feedback from end-users? What does "ur" mean in ur-EMODNET?
30		Italy	For fisheries data (my mainly field of interest), efforti should be done to make them available to scientists, even at faster rates than stated in the EC Regulation 199/2008.
31		Norway	Developing national infrastructures based on exisiting NODCs would help in achieving the goals of the EU Roadmap.
32		Norway	The Road Map should identify information gaps, recommend new infastructure to collect such data, urge MOs to provide long term reliable financing of data collection and storage to ensure sustainability of the system. EU should help release existing data from EU itself and MOs to feed in to the system. Miltary and private data should be included as far as possible. Use EMODNet to construct an Atlas of the Seas. Encourage development of new technology.
33		Poland	Implementation of programme to deliver high resolution bathymetry (MBES) should be more emphasized and put as highest priority. There is long way to establishing high resolution data sampling and thus intermediate step with numerical model is necessary. Proper bathymetry will allow for more accurate modelling and also will constitute basis for many of EMODNET targets.
34		United Kingdom	Building on existing activities is crucial. Too often this does not happen. Care is needed to ensure that quality controlled data is made available with appropriate metadata and other information - or if real-time unchecked data are made available, they should be flagged with a health warning.

	Type of organisation	Location	Comments
35		United Kingdom	Fails to do justice to the lack of key data that has already been identified by many studies as being a problem. More thought needs to be given to the mechanisms by which key data sets are transitioned into a sustained system. The question of what in situ measurements should be a national responsibility and those that are more appropriately funded at EU level should be given urgent attention. There should be more explicit linkage with data requirements that have already been decided.
36		United Kingdom	The last point above (Data collected using public funding should be freely available at....) - the statement is insufficiently well defined and ambiguous to allow a simple response. The question is somewhat more complex than this. If it's raw data – agree; if it is added value data then do not agree. The best available/most appropriate data should be used as inputs to products that serves the marine community. These data need to be captured and made available.
37		United Kingdom	The roadmap is very stong on data issues, but not strong enough on the need to gather observations. Marine spatial planning requires a greater density of observations. The private sector also has a large resource of marine data which should be available for planning purposes.
38	10 university	Finland	The 5 themes chosen seem reasonable as well as the hierarchical structure of the data collecting and maintenance. How this all will be achieved and financed is still rather vague. We also agree that this should be based on existing efforts, but there are gaps in monitoring and all monitoring points are not representative of the area and hopefully this would be addressed as well.
39		Spain	The potential use of ecosystems in coastal and marine waters around EU Outermost Regions is not fully understand as well as the need to develop a joint Database derived from Antartic National Research Iniciatives. A dedicated effort should be put in place to foster marine research and data collection in the diverse coastal and marine areas of the EU Outermost Regions, which are geographically located in the major World Oceans
40		Spain	The working document is focused on the idea to collect, organized and disseminate scientific data. There are references to human activities influencing the marine waters, but only within the industrial and economics data. There aren't references to the need to include, in the field of the European Marine Observation and Data Network , legal, institutional and governance data.

	Type of organisation	Location	Comments
41	11 European project or body	European organisation or project	A response from the “Data and indicators” thematic commission of the CPMR AQUAMARINA Group - to the EMODNET Consultation will be sent in French and English to the following email addresses: mare-maritime-data-consultations@ec.europa.eu MARE-C1@ec.europa.eu These responses will also be available on the CPMR website at the following link : http://www.crpm.org/fr/index.php?act=4,4,3,29
42		European organisation or project	Does EMODNET cover those data that should be available in real-time because they are used as input to forecast models (at timescales hours - days)?
43		European organisation or project	Even if one takes away some of the exagerated requirements of the fishing industry, data will still be sensitive. The price tag of a high-resolution mapping of the EU continental shelf, is such that politicians can only execute such a mapping after the current financial crisis. It does not need to be "either cost recovery or public spending". One could mix and match spending plans (with perhaps a prevalence for public spending).
44		European organisation or project	I think the roadmaps focusses too early on particular data sets, although these datasets are important. These is a much wider scope for the EC to act than what is identified within the roadmap
45	12 international body	Denmark	It would be very valuable to inform stakeholders, future end-users and institutions that already host relevant databases at early stages, how to best prepare existing data infrastructures for the integration into EMODNET.
46		International organisation	1. Appendix 3, p55-56. ICES is not the only data centre for OSPAR. OSPAR’s databases are hosted by various data consultants, as well as by the OSPAR Secretariat. 2. The EMODNET’s future after 2014 is not clearly defined. 3. All guidelines and standards used for the EMODNET system should take into account those already in use by the regional seas conventions.
47		International organisation	Existing data management structures should be linked. Existing tansboundary structures, such as the data managament system in the Wadden Sea monitoring programme should be used. Quality of data and reporting of data to data centers are still the bottleneck in data management

	Type of organisation	Location	Comments
48		International organisation	The regional sea basin nodes suggested should make use of & strengthen existing systems, e.g. regional sea databases. Note that ICES hosts only 1 HELCOM database, others are hosted by various data consultants and the Secretariat. Who will host and maintain EMODNET after the completion of this project in 2014? Guidelines and standards used for EMODNET should consider those already in use by the regional sea commissions.
49	13 civil society, environmental group, charity	International organisation	More emphasis required on the importance of gathering observations, and of obtaining data gathered by private sector organisations.
50		International organisation	should be kept in a way that allows the roadmap to evolve as it develops
51	14 private research institution	Norway	Present pan_European data collection cmes mostly from gathering data from national data centers, supported by national public funds. These datasets are genrally highly fitted to national priorities and limited in time and space for broder exploitation.
52	15 none of these	Croatia	Identification, collection, processing, analysis and interpretation of data should follow closely the following steps that should be implemented: 1. FIRSTLY GOALS OF THE PROBLEM THAT SHOULD BE SOLVED SHOULD BE PRECISELY DEFINED. 2. ONLY AFTER GOALS ARE PRECISELY DEFINED THE IDENTIFICATION OF AVAILABLE DATA AND THEIR COLLECTION, PROCESSING, ANALYSIS AND INTERPRETATION SHOULD BE DONE. ABOVE TWO POINTS SHOULD NOT BE IMPLEMENTED IN REVERSE ORDER.
53		United Kingdom	I am concerned that this is a very ambitious project with not well defined objectives. Care must be taken to build on existing regional and thematic initiatives and infrastructures, and not to duplicate existing resources. The purpose of EMODNET, and the nature and basis of its interactions with relevant initiatives, must be very clearly defined. There should be some use cases to allow examination of whether EMODNET is delivering useful capability to end users.

ANNEX 4 FINAL COMMENTS

Those consulted were invited to provide comments on any other relevant aspects of marine data. The submissions from the respondents have been reproduced in their entirety. Typographical errors in the submission have not been edited out. They reflect the views of the organisation or individual replying – not those of Commission staff.

	Type of organisation	Location	Final Comments
1	01 industrial interest group	Italy	- To profit concerning new EU elections for EU Parliament representatives, to strenght common pubblic opinion that the finalisation of the Lisbon Treaty is mandatory now in order to: - forster EU Foreign Affairs Policy - forster EU Economy - react against the actual global worlwide financial-economy crisis
2		Netherlands	Maritime Safety and Security in EU waters are our main concern.
3		Portugal	Collecting and organizing with standards is essential, but the consultation must be in real time. The vision is for Ocean Matters Portugal allow everyone to access the data online in real time, where if the data has fees, you can pay online by VISA.
4	02 large enterprise (more than 250 employees)	France	The dfficulty is not only on data themselves but identification of levels in data (raw to digest usable products) and how this is split between core state mission versus downstream commercial activties. The difficulty is also on separating system and services and commitments of each of them.
5	03 medium enterprise (between 50 and 250 employees)	Spain	It is currently extremly difficult to work towards a comprehensive and excellent environmental impact assesment in the coastal and marine zone, because of the lack of existing data/good quality data.
6	04 small enterprise (between 10 and 50 employees)	United Kingdom	The EU should support existing institutions e.g. hydrographic offices and initiatives e.g. SeaZone and not ignore or attempt to compete with them. These initiatives are already providing users the data and information they require, and are prepared to pay for, or obtain under wider agreement e.g. to education and research. Revenues generated by off-the-shelf data products provide a sustainable supply of improving data and help ensure user needs are being met.
7	05 micro enterprise (less than 10 employees)	Ireland	See email returned to Dr. Ilaria Nardello, Marine Institute re similar study we undertook for commission 12 years ago.

	Type of organisation	Location	Final Comments
8		Ireland	The EU is currently supporting alot of activity in the modelling/ remote sensoing area, we really need to see an increase in the amount of in situ long terms data sets which are availalbe as long terms insitu mooring networks need to be focused on.
9	06 self-employed	France	Again and again : support data collection, partiularly in open waters that are not in any conutry' juridiction
10		France	Not only deal with data collection, accuracy and availability, but also set up the complete working information system
11		Netherlands	Im looking purely from a commercial point of view
12		Netherlands	Simplicity, reliability what will happen with data, and a clear: "what can I gain from it when providing data" are key points for a marine knowledge infrastructure to my personal belief.
13		United Kingdom	Everything can be improved including marine data. This does not mean that it should be given exceptional priority at taxpayers' expense. During times of recession it would be unwise and irresponsible to divert resources to a project that, although generally desirable, has a low priority. Just because the EU has the ability to do something does not mean that it has to do it.
14	07 local government	France	Don't forget the consultation of the stakeholders, specially the coastal regions. Thank you for your work
15		United Kingdom	I believe quite a lot of data should be quality assured locally by people with local knowledge.
16	08 national government	Finland	Please, involve the Regional Sea Conventions in this work and make them into regional data hubs for marine data! this will require incentives, e.g. funding and involvement in the decision making on how to use marine data. By doing this you will not solely rely on top-down control on this but also provide a channel for bottom up initiatives. I am pleased that you carry out this type of polls
17		Germany	Funding is needed for vessel infrastructure to allow the near-real time maintenance and recovery of in-situ observing platforms. Funding structure should support long-term research activities to become more useful and better integrated into operational services. Long-Term Ecosystem Research (LTER) sites at selected locations should be closely connected to subregional and regional observatories and also funded over decades.
18		Germany	Support the EuroArgo infrastructure project!!!!
19		Italy	The EU should fund major European initiatives such as Euro-Argo.

	Type of organisation	Location	Final Comments
20		Italy	The Italian Ministry of the Interior (Department of Public Security - Central Directorate of Immigration and Border Police) is in charge, in compliance with the national law, of the strategic coordination of the activities aiming at countering illegal immigration by sea.
21		Italy	The answer to the previous question is to be considered accordingly to relevant national competences.
22		Luxembourg	L'UE ne devrait pas se limiter à une vision strictement européenne du sujet, mais favoriser une approche plus globale et rechercher dans la mesure du possible des synergies avec d'autres organisations régionales ou internationales existantes.
23		Netherlands	-
24		Norway	Many initiatives have been taken for observation and data collecting purposes in the sea areas concerning Norway. It is of vital interest that these initiatives are made available on the same platform and within a common framework.
25		Spain	THERE ARE NO SUFFICIENT DATA! Problem is as simple as that! How many current meter are opperational at The Med. Sea? Only a few!. Do you know that most of the countries are unable to transmit in real time the tide gauge data? It is impossible in this situation, for example, to develop a tsunami warning system! Status of the networks is poor! The issue is not data policy, but existence!! Institutions in charge of data would just need a small ammount of money to distribute in a more efficient way the SCARSE existing data. We are doing so in MyOcean. What society needs is more measurements.
26		Sweden	Traditional oceanographic organisation tend to look at the problem from a to narrow perspective. Please look at the organisation of genetik and molecular biology data accession number to the data base compulsary for any kind of publication. You can not publish if the data is not added to the data base.
27		United Kingdom	Beware of a top-down approach which produces processed data which are so generalised that they are not useful to anyone. Collection and distribution of raw data should be the priority: e.g. consistent bathymetry and seabed sediment data.
28		United Kingdom	Currently end users users are using "webhits" as a method of measuring uptake. If data is to be exchanged need a method to collate hits for end customers.

	Type of organisation	Location	Final Comments
29		United Kingdom	Interoperability is a key area for improvement that in turn requires provision of informtion about QA of data. This will support integration of data to create new regional scale information products. There is a role for models in optimising the design of effective monitoring programmes ensuring that the degree of temporal and spatial monitoring coverage is appropriate. The amount of data for compliance monitoring also depends on the level of confidence requireed by the end user. Reducing uncertainty may come with a price but can also be achieved by better use of existing data.
30		United Kingdom	It is not certain in the questions relating to EU "support" whether financial support or support in terms of providing advice etc is being referred to.
31		United Kingdom	UKHO is interested in marine data at all scales from harbour and estuary to open ocean. Bathymetric data has well recognised international standards (IHO). Data formats are well understood, hydrographic nomenclature is consistant. These standards are published and available to other disciplines to use. New standards should not be developed where already in existance and common use. UKHO believes that relevant experts should be responsible for the assembly and quality checking of data.
32		United Kingdom	the answers for the section"options for moving forward" are marked as "do not understand question" on the basis that the words "EU should contribute / suppport" can mean a variety of things, some of which we'd agree and others we would not. In this questionnaire it is not clear what meaning is intended.
33	09 public research institution	Belgium	(iii) “collect once and use many times”: laudable but not always feasible. Data collected for 1 purpose is not always usable for another even though related purpose. Experience suggests that identifying and accessing data can provide useful insights into trends and may be useful in the design of an appropriate sampling regime, but the data cannot be used directly. The challenges identified by the MODEG group (page 23) will be addressed by Member States working more closely in the design and implementation of data sampling/monitoring programmes (i.e. the full data life-cycle).
34		Croatia	Most of the indicators or parameters are problem related. They are not of general use. Clear reasons why they are collected should be set.
35		France	Additional comments in a separate documents sent to DG Mare / I. Shepherd
36		France	Strongly recommend to anticipate the way forward mechanisms in liaison with IHO where Marine Spatial Data Infrastructure standards are under development.

	Type of organisation	Location	Final Comments
37		Germany	1. EU should focus on the support of observing networks which are beyond national interest to assure the global view on ocean conditions. 2. Support (in particular personel) is needed on the level of the data producers to implement standards of data collection, processing and transmission to data centres. 3. The interoperability of the data centers is a key condition to restrict the workload of data producers in an acceptable level to provide data to the public.
38		Germany	Data has to be freely available, otherswise it is not used and is therefore of no use. American data policy is lightyears better than EU policies. While "Europe" is sending one satellite after the other into the orbit their data is mainly validated with in-situ data in American waters. The ratio of satellite papers dedicated to American or European waters is at least 10:1. Reason: EU in-situ data policies.
39		Germany	I will comment on the Roadmap in the next few weeks on the basis of internal discussions in our research centre.
40		Germany	In relation to certain fisheries data (fleets, VMS, economics) accessibility to data for academic purposes is still limited due to confidentiality reasons. EU should encourage member states to open data policy in this field and help developing strategies that overcome confidentiality concerns.
41		Germany	Infrastructures for research data or parts of it should be operated by public research institutions and by no means by SMEs or private companies! Otherwise the sustainable and long-term availability can not be assured. "Libraries" have public funding. EMODNET should also focus on meachanisms to support a "cultural change" in science in terms of data.
42		Germany	It is not only the occational collection of data by scientists. There is a strong need for operational data collection, especially for biogeochemical data, that is consistent and longtime. This can only be accomplished by automated observing networks that should be integrated and operated on a regional basis.
43		Germany	The EU should set up longer-term funding schemes for time-series observations, which are so necessary to monitor climate change. If these data are as important as is stated everywhere, then why is it so difficult to find the appropriate funding schemes. This is particularly difficult, as this is not about the development of new technology and methods which are often the targets of funding schemes. But in terms of global change such data are necessary, particularly in the Arctic.

	Type of organisation	Location	Final Comments
44		Greece	EMODNet should not only focus on the data management aspect only but on the need to have an adequate and coherent observing system in place. While the open sea (or climate) component of GOOS has been developed well, this is not the case for shelf and coastal seas. Additional investments must be made by Europe (centraly) and in the same time the EU must make efforts to commit Member States to build and sustain a proper observing system (similar to what is done for the fisheries policy).
45		Ireland	Data integration and quality checking needs to begin at the lowest possible level. The integration needs to be dynamic so that data users are not contrained to particular views i.e. you can drill up or down at different spatial, temporal, or other resolitions. The current approach of having static tables of highly aggregrate data as in fisheries is generating unnecessary work and is ultimatily constraining the utility of datasets.
46		Italy	Besides the marine data infrastructure, it is very important that the EU maintains its role in supporting the Europe's marine observation system and its improvement, promoting also the utilization and development of complementary advanced technologies.
47		Italy	It will be important to make sure that research is at the basis of the EMODNET future data collection system, tightly coupled to operational system such as GMES Marine Core Service
48		Italy	The EU should support the Europe's marine observation system and its improvement, promoting also the utilization and development of complementary advanced technologies.
49		Italy	The Meditterranean Partner Countries should invoved of the Marine Data infrastructure.
50		Lithuania	We would like to consider and support the idea of managing the collected data according general formats and storage approach prepared and agreed by all data providers (common structure of the EU MARITIME DATABASE); We also think, that data should be accessible throughout the network of data providers, but the data storage and harmonization (as well as quality check) should be supported by EU.
51		Norway	Do not event the wheel once again, build on exisitng structures.

	Type of organisation	Location	Final Comments
52		Portugal	there seems to be a major discrepancy in attitude towards the free and rapid sharing of raw and processed information between scientific communities working with remote and in situ data of the oceans. identifying the reasons for this difference in attitude/evolution might help to understand how to move forward.
53		Spain	The development of new standards for interoperability may not be the most constructive option. Standards already exist that can answer interoperability needs if mappings between these are created and made avaiable to the public.
54		United Kingdom	Definitive and authoritative data and information are required. EMODNET can focus on providing support to member states to develop their national mapping programmes. EMODNET could assist in developing national data centres (such as the marine Data Archive Centres in the UK) so that they have the wherewithal to store commercial and government data and develop these into fit-for-purpose, authoritative geological, habitat, and heritage maps and models to underpin planning and sustainable development across the European Seas.
55		United Kingdom	In the UK MEDIN is charged with what is proposed at the pan-European level with EMODNET The UK is enacting the Marine Bill, establishing the MMO as the "one stop licensing authority for the use of our shelf seas. EMODNET must consider the scope of what data it will embrace (i.e. variables, frequency, latency, accuracy, extent) and why it is managing it. POL welcomes the EMODNET proposal because it is in the spirit of the Environmental Information Regulation. The objectives of EMODNET will encourage wealth creation by enabling consultancies (SMEs) to flourish
56		United Kingdom	NOCS strongly supports EMODNET. Working with other European Marine research institutes we co-drafted the Aberdeen Declaration in 2007 which mentions EMODNET. In the UK the Marine and Coastal Access Bill and Scottish Marine Bill would benefit from the enhanced data infrastructure proposed under EMODNET to achieve well-informed marine spatial planning. We support the concept of 'collect once, use many times' for marine data - observations are essential. The private sector can be encouraged to make their data available to the wider public.

	Type of organisation	Location	Final Comments
57		United Kingdom	There is no mention of the joint UNEP/IOC Assessment of Assessments and the steps being taken to initiate a regular process for the assessment of our seas at a global level. This is likely to provide a strong user requirement (including at Government level) similar to that which has arisen over a period of time as a result of the IPCC process. EMODNET (and the Marine Strategy and Maritime Policy as a whole needs to give more attention to this development and its implications.
58	10 university	Finland	Hopefully this effort would help in more equal spatial monitoring scheme. Basins such as Bothnian Sea are under represented, perhaps due to lack of a research station or such on its shores.
59		Spain	I see some weakeness on EU actions to support halting the loss of marine life, including deep water habitats, sharks and marine mammals populations in the oceanic realm as well as seagrass beds and reefs in shallow coastal areas. We need to enhance national and international efforts to designate and enact more Marine Protected Areas. Not only our compromise with the UN Millenium Goals are in perils, but the health and well-being of our coastal societies is also menaced.
60		Spain	Through the use of the information provided by the existing and future underwater observatories, the roadmap should evaluate the human and natural contributions to marine ambient noise and describe the long-term trends in ambient noise levels, especially from human activities. It should support the research needed to evaluate the impacts of ambient noise on marine species, especially in biologically sensitive areas. It should also recommend research needed to develop a model of ocean noise that incorporates temporal, spatial, and frequency-dependent variables.
61	11 European project or body	European organisation or project	A central web site which pointed to all involved bodies, internationally would be useful. Also, someone to help with advice on these bodies
62		European organisation or project	A response from the “Data and indicators” thematic commission of the CPMR AQUAMARINA Group - to the EMODNET Consultation will be sent in French and English to the following email addresses: mare-maritime-data-consultations@ec.europa.eu MARE-C1@ec.europa.eu These responses will also be available on the CPMR website at the following link : http://www.crpm.org/fr/index.php?act=4,4,3,29 CPMR ID Number : 5546423688-07

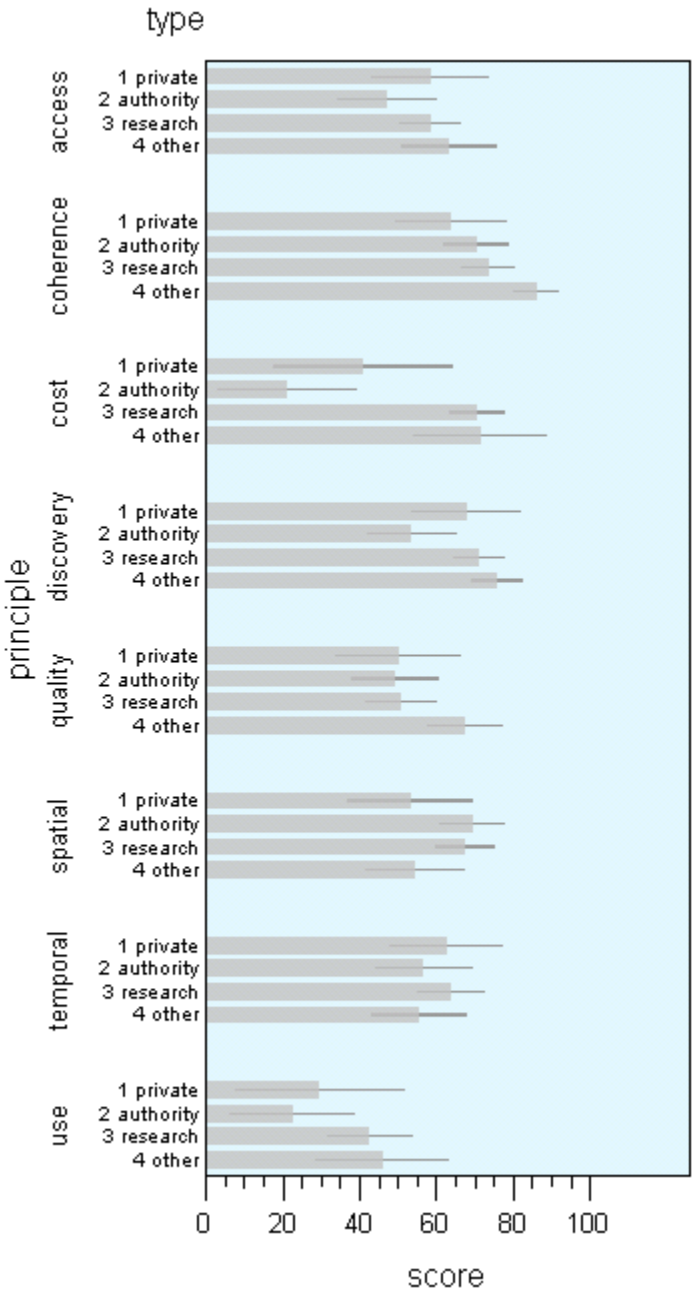
	Type of organisation	Location	Final Comments
63		European organisation or project	EU should definitely pay more attention to its sea areas as Europe is so strongly dependent on them. In spite of the many marine activities, of which many danger sea life, the seas are not very well studied yet. All actions towards better understanding of the regional seas and the Atlantic are in the favor of coming generations. An EMODNET will certainly work towards a better administration of the seas.
64		European organisation or project	European Maritime Heritage is currently working to compile input on the maritime/cultural resources of the European maritime and fluvial states, as a contribution to the proposed Atlas. A high proportion of historic and traditional vessels preserved in Europe are in private ownership and collection of information is an uncertain process. We welcome any contribution which the Atlas can make to making this cultural resource more accessible , and more widely used.
65		European organisation or project	The FishPopTrace consortium has pointed out in its project proposal (FP7; KBBE-212399) that the dispersal and loss of biological data related to marine species is an imminent problem and embarked on the endeavour to counteract this tendency (https://fishpoptrace.jrc.ec.europa.eu). EMODNET would greatly help to put our and the similar efforts of other stakeholders on a sustainable and durable basis.
66		European organisation or project	There are several areas where more activity could be initiated, eg: - making environmental data collected by industrial operators available to public sector institutions with an environmental monitoring mandate - migration from a confrontational approach to marine environmental monitoring to a cooperative approach with the different players (vessel operators, fisherman, port authorities etc)
67		Germany	The EU should really avoid to reinvent the wheel where it isn't necessary. That means it should focus it's initiative in supporting existing data-base systems and networks in their efford to get scientific primary data from princible investigators.
68	12 international body	Denmark	We have stressed the need for greater integration of research, data related to fish genetics (WGAGFM reports 2008/2009; http://www.ices.dk). Indeed research institutions have accumulated large collections of potentially valuable data sets. Published accounts usually include only summary statistics while raw data are highly dispersed, difficult to access and at risk of getting lost. A problem existing across most fields related to marine research. EMODNET is an extremely valuable initiative capable of giving impetus to the effort of creating a functional comprehensive data infrastructure.

	Type of organisation	Location	Final Comments
69		International organisation	HELCOM coordinates Baltic monitoring and compiles harmonised data. EMODNET should utilise and support such existing frameworks to avoid double work. EC should support MS in fulfilling existing activities rather than create additional burdens. Continuing and improving existing monitoring activities will ensure comparability of data over time. All EC funded regional marine projects should be required to fulfil joint data and metadata standards so that their outputs/results can be made full use of. Project output datasets should also be made available to the regional data nodes for future use.
70		International organisation	Sufficient resources should be made available by EU programmes to ensure that all EU financed projects follow minimum guidelines for data quality, storage, exchange and reporting.
71		International organisation	That the role of data standards harmonisation and data quality is often underplayed in projects involving data collection or aquisition and it should be placed on an equal footing with other work package tasks that often attract more funding. All data monitoring and collection activities should have an intrinsic data strategy that addresses data policy, ownership, stewardship and availability of the data after the lifetime of the funded data collection exercise.
72		International organisation	The regional seas conventions play a role as regional environmental information focal points for marine regions. EMODNET should make full use of information collected and compiled by the regional marine conventions in order to avoid duplication of work.
73	13 civil society, environmental group, charity	France	We base our approach on the bathing waters directive. Moreover we worry about the macrowastes while the directive n°2008/56CE (table 2 annexe C) must be considered seriouslyW, thus we miss these kind of datas.
74		International organisation	HIgh quality datasets that can be readily accessed are essential for any marine spatial planning system. The private sector also gathers marine data, in particular operational oceanographic and meteorological data, which needs to be curated and made more widely available from data centres. Barriers to data access need to be removed, especially where the data has been gathered at public expense.
75	14 private research institution	Italy	A good degree of interoperability is crucial for the success of EU maritime policies. Some factors are often perceived as obstacles to interoperability and EU action should focus on them. First, a lack of a common bureaucratic culture, is often complained. Also appropriate regulations concerning data policies (data ownership, possession and transfer) and procedures are lacking.

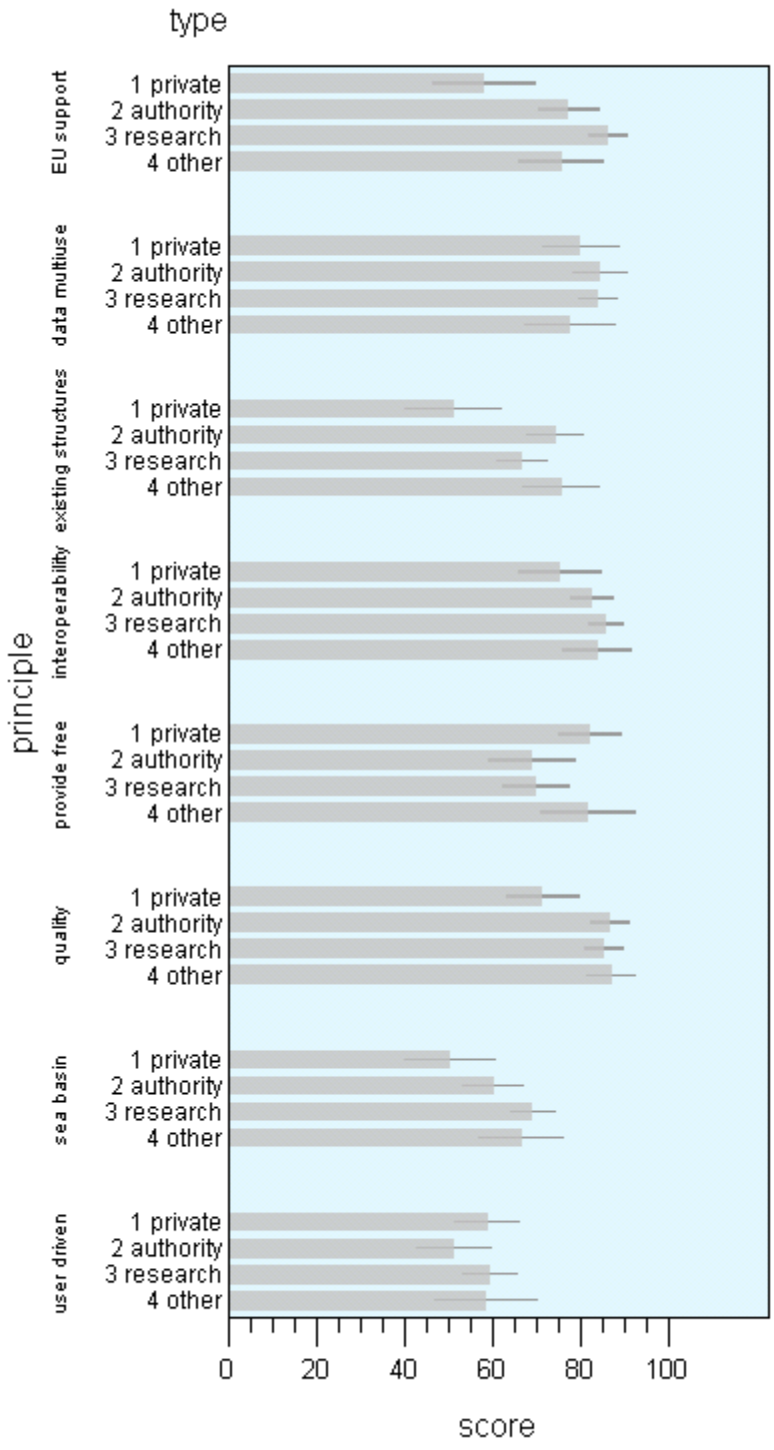
	Type of organisation	Location	Final Comments
76		Norway	Regional and pan-European coordination and funds are absolutly required in order to fill in the gaps, and lead to datasets that can support European marine and maritime policies (also including the marine component of the water framwork directives). Coordination at European level is also the best tool for overcome the limits of national programmes, when they relate to conversatism, technological and innovative implementations, and cost-efficiency. But also to secure harmonisation, data easy data access and exchange.
77	15 none of these	Croatia	I AM REPEATING: 1. FIRSTLY PRECISE GOALS (PROBLEMS TO BE SOLVED) SHOULD BE DEFINED. 2. ONLY AFTER PRECISE GOALS WERE DEFINED THE IDENTIFICATION, COLLECTION, PROCESSING, ANALYSIS AND INTERPRETATION OF DATA SHOULD BE DONE. UNDER NO CIRCUMSTANCES ABOVE TWO POINT SHOULD BE IMPLEMENTED IN REVERSE ORDER.
78		France	I hope that insular situation , and specially small island will be integrated in data, according to that "isolate and small" are difficult tointegrated in data system .Small island are not "strong" with mainland, but not also with "maritime issue" . Anyway , they are, and islanders are members of UE ! Sorry for my poor english language !
79		Sweden	Due to the overfishing in the waters, and a threatening extinction of certain fish species, EU should stop its present financial support to fishermen and fishing boats. A close co-operation has to be established with non-EU countries in the world to reach agreements on policies with the aim of obtaining a healthy and sound water climate and fishing industry.

ANNEX 5 ROBUSTNESS OF RESULTS

Although 300 is a large sample, there were some stakeholders who did not reply. In order to assess the impact of the sampling a number of tests were run. The figure below is equivalent to Figure 3. For the question "what are your difficulties with the current infrastructure". 100 marks were awarded for "strong barrier", 50 for "there could be some improvements", and -100 for "the status quo is satisfactory". An average was then calculated. The error bars show 90% confidence limits.



And the figure below shows a similar analysis for the question concerning the principles for a sustainable marine data infrastructure (Figure 5). 100 points for "strongly agreeing", 50 for "mildly agreeing", -50 for "mildly disagreeing" and -100 for strongly disagreeing. Again an average was taken and 90% confidence limits shown.


type
principle
EU support
data multiuse
existing structures
interoperability
provide free
quality
sea basin
user driven
1 private
2 authority
3 research
4 other
0
20
40
60
80
100
score