

Results on existing fleets foreseeable evolution for the next 10 years

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The request to improve the ocean understanding is growing, while the rapid evolving of new technologies open to a novel vision of the ocean.

In this scenario the ocean survey needs the development of new approaches, where Research Vessels and associated equipments have a central role.

A picture of the existing vessels and their short term foreseeable evolution is necessary to define an effective strategic view of European fleets.



The considered vessels

All vessels with length $\geq 35\text{m}$ and directly accessible to research.

The vessel investigation examined:

- class (Global, Ocean and Regional)
- Age
- Major research activity (multipurpose, oceanography, fishery, other activities)
- Major technical facilities

The main source of information was the European Research Vessel Infobase (

<http://www.rvinfobase.eurocean.org/>)



Class

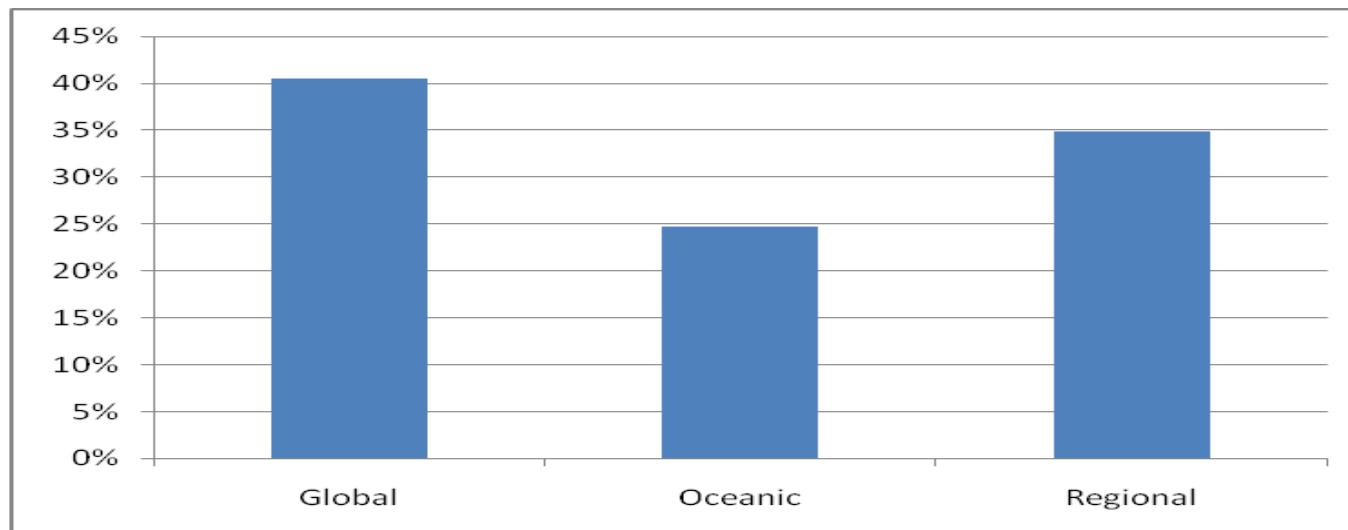
Global vessels are large (>65 m) and currently operate on an at least multi-Ocean scale

Ocean vessels are large enough (>55 m) to currently operate on an Ocean scale

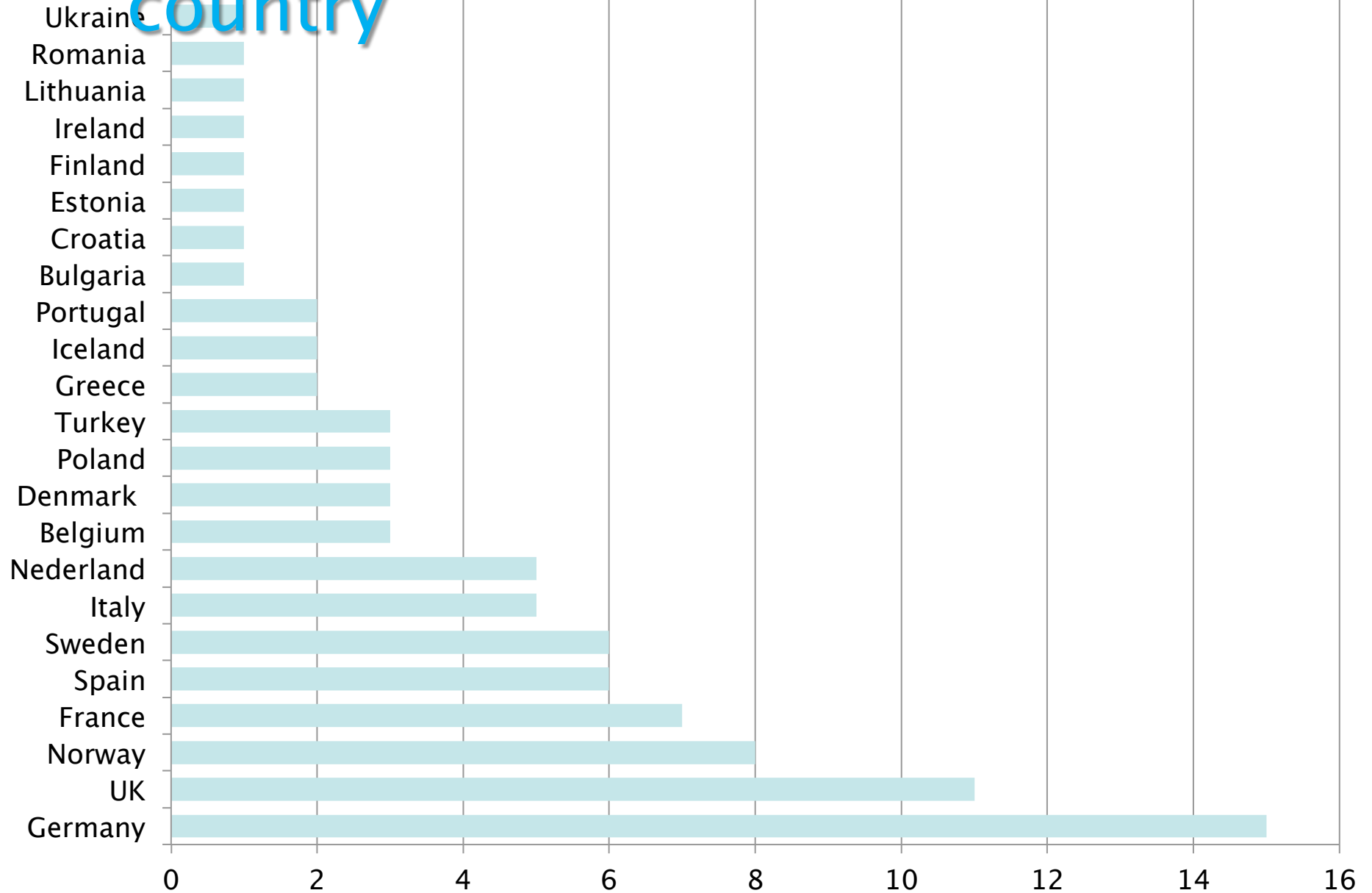
Regional vessels currently operate generally on a European Regional scale

Research fleet

Vessel Class	Number of vessels	Number of operating countries
Global	36	14
Ocean	22	14
Regional	31	15
Total	89	24



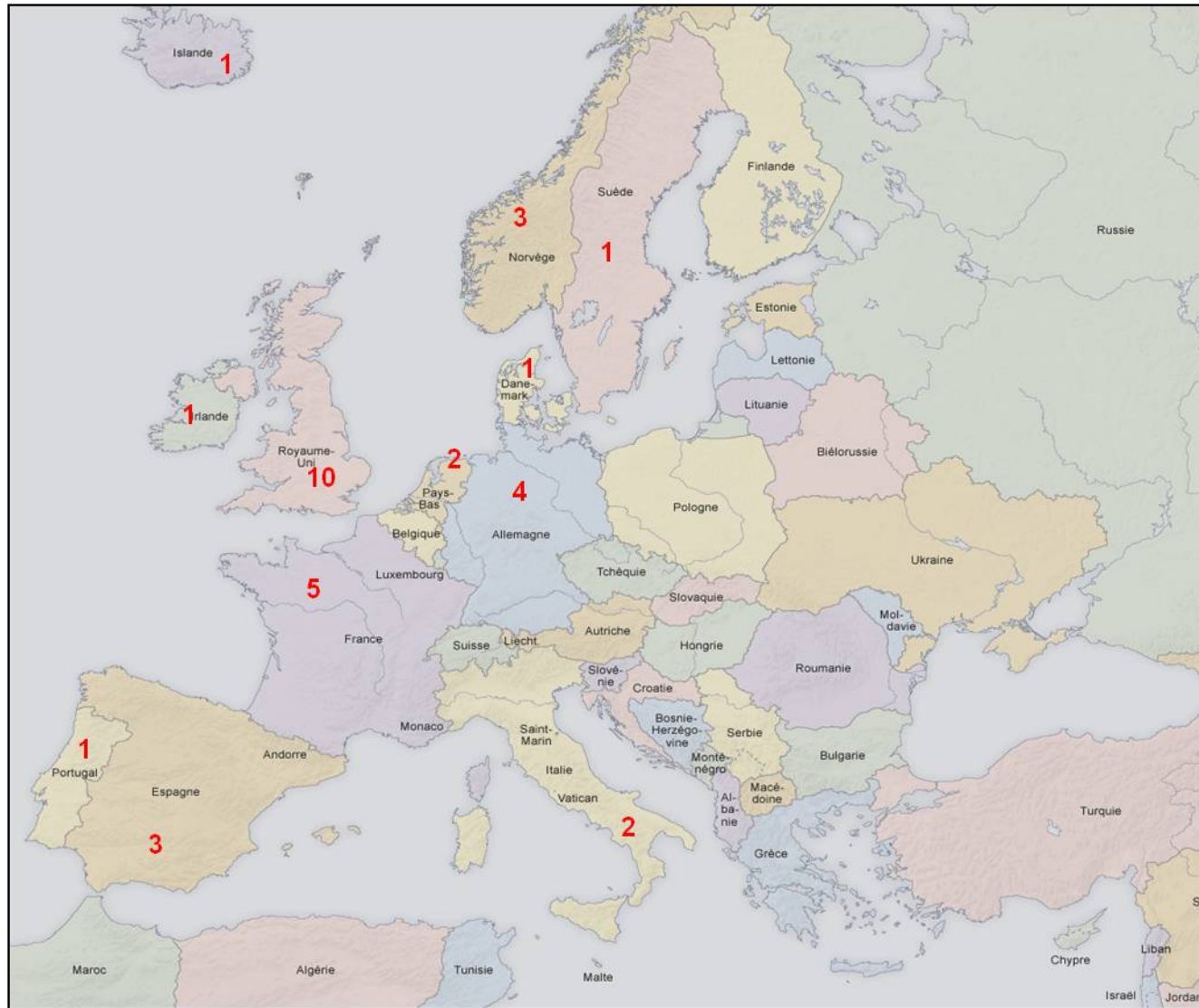
Distribution of vessels per country



Distribution of vessels per

Country	Vessel number	Vessel Class		
		Global	Ocean	Regional
Belgium	3			3
Bulgaria	1		1	
Croatia	1			1
Denmark & Faroe Islands	3	1	1	1
Estonia	1			1
Finland	1		1	
France	7	5	1	1
Germany	15	4	5	6
Greece	2		2	
Iceland	2	1	1	
Ireland	1	1		
Italy	5	2		3
Lithuania	1		1	
Nederland	5	2	2	1
Norway	8	3	4	1
Poland	3		1	2
Portugal	2	1		1
Romania	1	1		
Spain	6	3		3
Sweden	6	1	1	4
Turkey	3		1	2
Ukraine	1	1		
UK	11	10		1

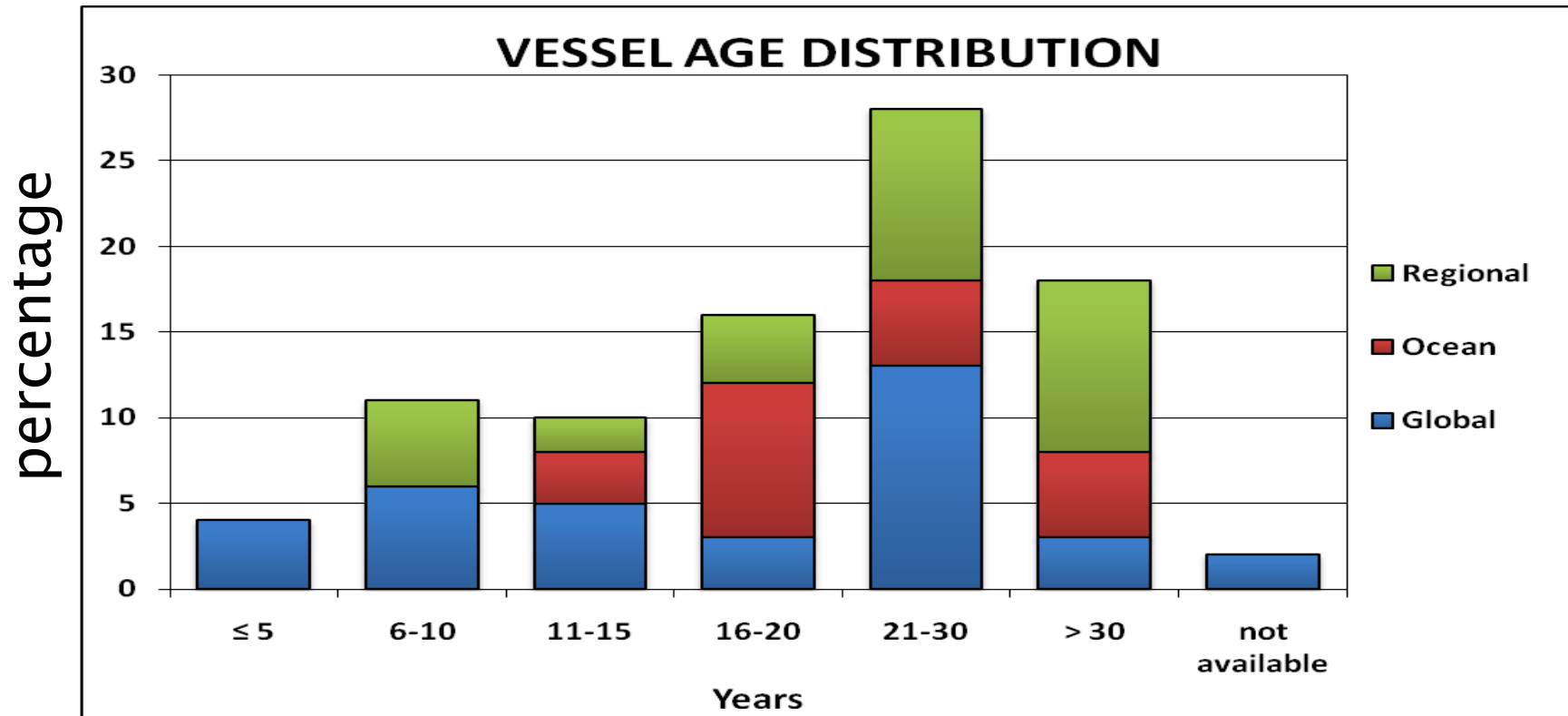
Global vessels



Oceanic and Regional vessels

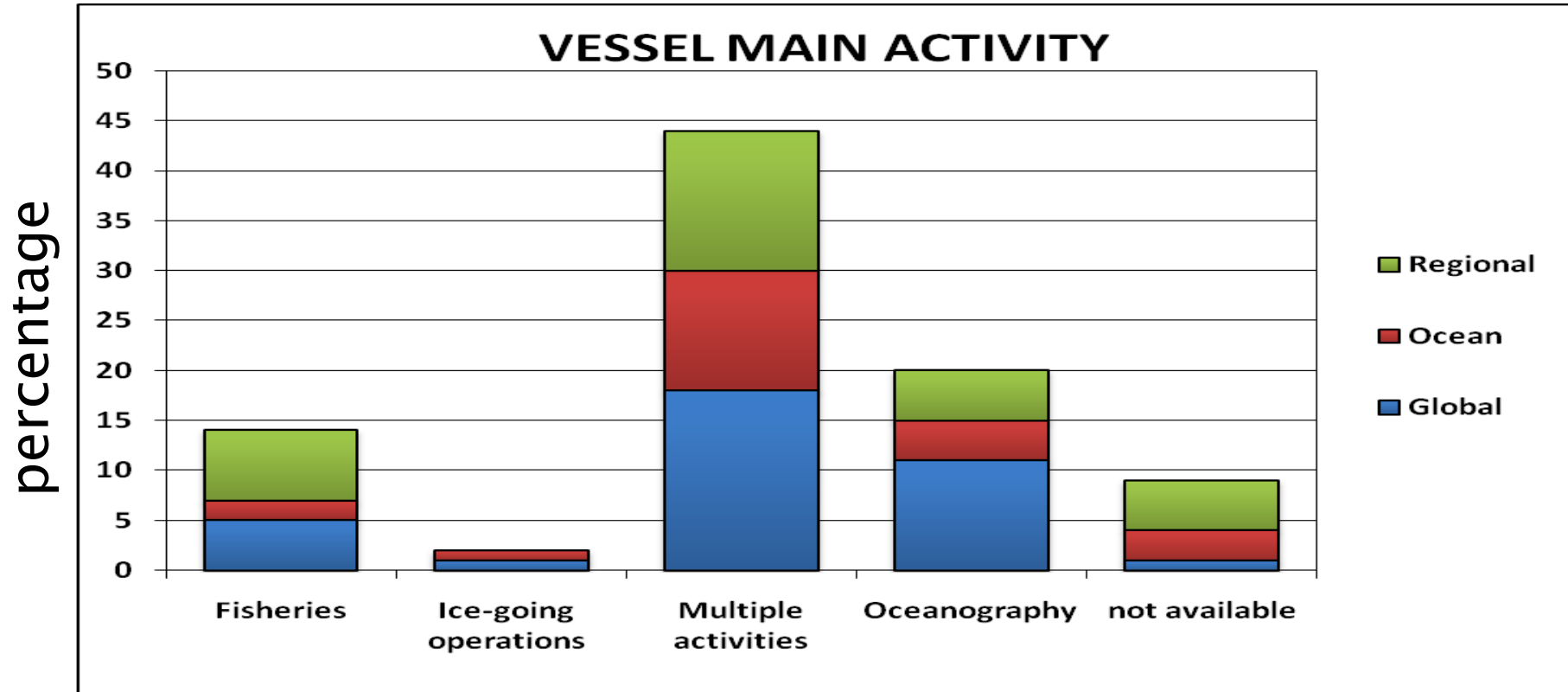


Vessel age



Half of vessels are more than 20 years old, with regional reaching 66%. The vessel age is a weakness of the European fleets.

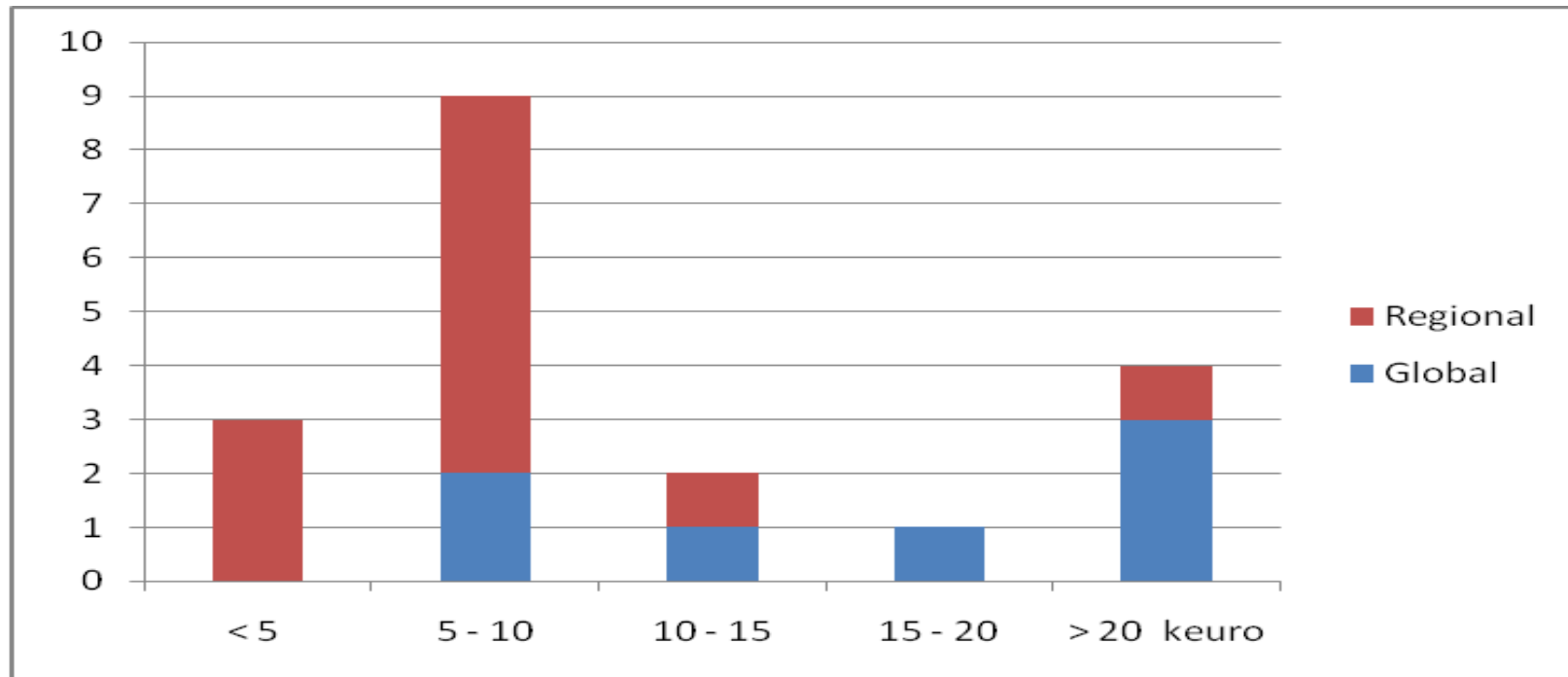
Vessel main



Almost all vessels are able to provide basic data processing together with CTD capabilities. Coring capability is available in large number of vessels. The presence of ADCP and multibeam systems is almost 45%.

Present ship time costs

Vessel running cost per day



The cost of each vessel may vary changing country and/or organization and few is known about its composition.

Passive costs roughly range from 50 to 80% of the total cost. Several vessels are not used full time.

Vessel Planned or under Construction



This document is to be filled in, to the extent possible, for each foreseeable project concerning research vessels fleet evolution for the 10 next years (2011-2020).
Please indicate if information given are confidential and could not be published, by checking boxes in regards of each question.
This information will be used and synthesized for the Deliverable D1.1.wich is a public deliverable.
You can add other information of the project, such as some general draft text or picture.
Important : For existing vessels, please update the Eurocean database.

Confidential

Country/flag	<input type="text"/>	
Owner/operator	<input type="text"/>	<input type="checkbox"/>
Contact person	<input type="text"/>	<input type="checkbox"/>

Project description (new vessel, vessel refitting, new equipment, equipment refitting ...)

Type

Global/ocean vessel	<input type="checkbox"/>
Regional vessel	<input type="checkbox"/>
Coastal vessel	<input type="checkbox"/>
Equipment	<input type="checkbox"/>
Other	<input type="checkbox"/>

Status/project maturity

Pre design	<input type="checkbox"/>
Finalised design	<input type="checkbox"/>
Order placed	<input type="checkbox"/>

Planned date of availability for cruises between 2011- 2020

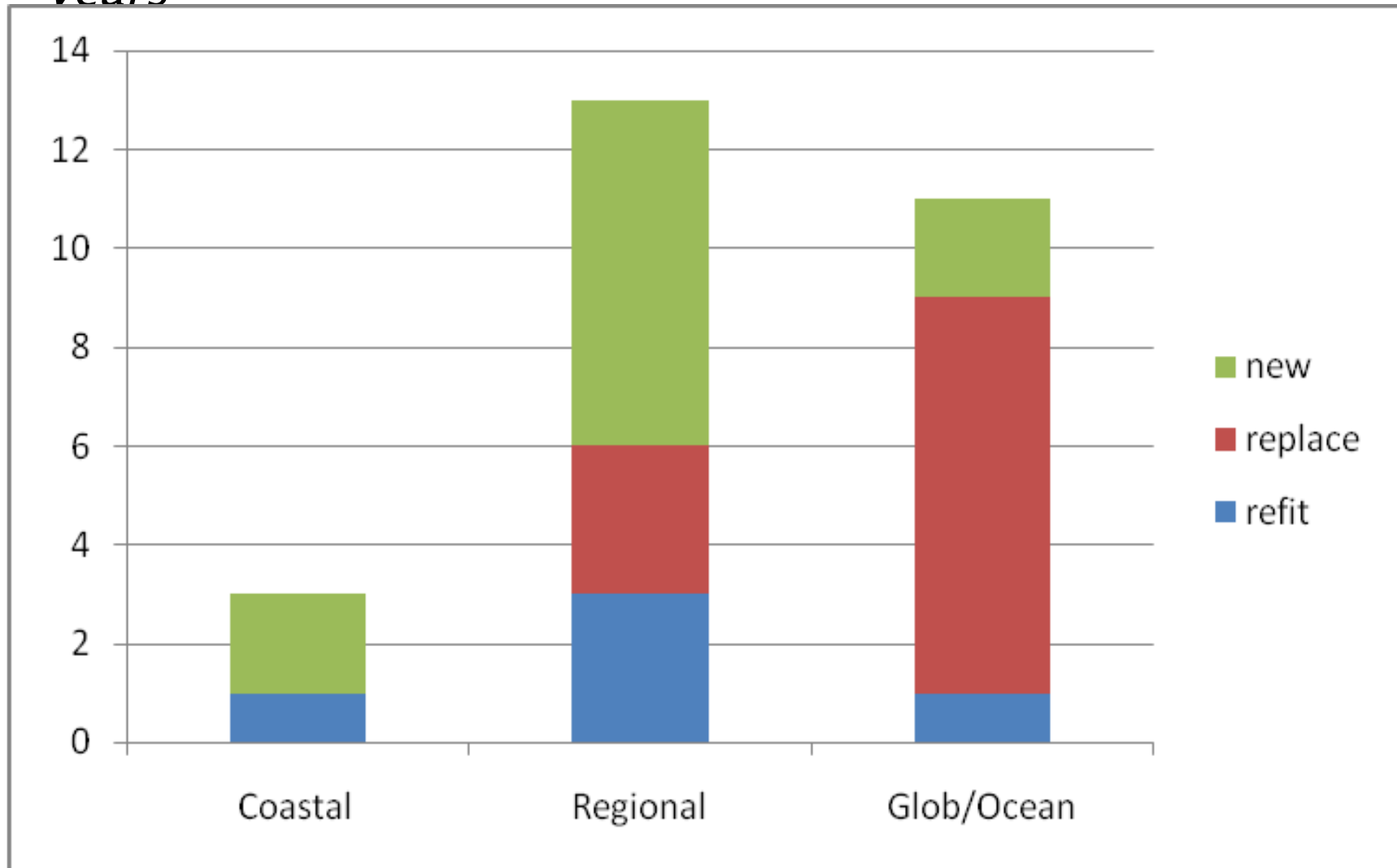
Funding

National budget	<input type="checkbox"/>
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Vessel Planned or under Construction

Country	Vessel number	Vessel Class			scheduled year	Old vessel replacing/refit
		Global /Ocean	Regional	Local		
Belgium	2	1	1		2012 and 2015	two replacement
Denmark	2		2		2013	
Estonia	1		1		after 2020	
France	2		1	1	2015-2017	
Germany	4	3	1		2015-2011	three replacements one refit
Ireland	1	1				Refit
Norway	3	2	1		2013-2018	three replacements
Romania	1		1		2015	
Spain	3	1	2		2010, 2015, after 2016	two replacement, one refit
Poland	2	1	1		2011	one refit
UK	1	1				replacement
Turkey	4	1	1	2	two new in 2012 & 2014	one refit
Total	26	11	12	3		

Number of new/refit foreseen vessels for the next 10 years



Location and Number of Projects per Country



Foreseeable Scenario for the Next Years

2011 Fleet condition vs foreseen situation in 2020

CLASS	2011		2020 projection			
	Number of vessels	%	Number of 2011 existing vessels still operating	%	Total number of foreseen vessels	%
<i>GLOBAL</i>	31	45	18	44	32	63
<i>OCEAN</i>	17	25	12	29		
<i>REGIONAL</i>	21	30	11	27	19	37
<i>Total</i>	69	100%	41	100%	51	100%

min

max

We will have a vessel number reduction, but also a significant reduction of fleet age (50% of vessels will be less than 10 years old).

The vessel scenario, for the next future, appears positive for

New Role of Research Vessels

Two aspects need to be considered:

- The increasing relevance of the ocean both for what concerns its exploitation and the understanding of the human impact on the environment

- The rapid evolving new technologies, which permits a novel vision of the ocean.

Technology advances

Marine research is critically dependent on advanced technologies, becoming the beneficiary of several emerging technologies (e.g. nanotechnology, biotechnology, robotic).

The novel miniature sensors favor the development of automatic and continuous observation of a large spectra of parameters.

The development of unmanned integrated marine observatories of the water column and of the sea bottom.

The enhanced robotic capabilities to conduct remote marine operations more and more sophisticated.

Fleet Expectation in Relation to New Needs

Today, fleets are approaching a crisis in that their role is changing, but the research vessel remains an essential infrastructure in support of marine research.

Future vessel mission requirements

While previously RVs were the primary platform for data collection, the new technologies are modifying their function.

The new ship will have the role of deploy and service mobile and enduring assets and act as a nexus for the aggregation of acquired information.

Their investigation activity will be mainly devoted toward complex and innovative non standard experiments or when heavy operation are necessary.

Fleet Expectation in Relation to New Needs

Vessel usage optimization

A more efficient use of fleets at different levels.

- Optimize single vessel and country fleet operability
- Operate for a Regional and European coordination by
 - Enlarge vessel access through transnational projects
 - Foster exchanges of shiptime, scientific equipments, scientists and technicians
 - Favor coordinated plans for new vessels on a regional level

Concluding Remarks

Well known weaknesses of the European marine research are the deficient joint approach, the imbalance in research and technological capacities among regions, few contact with marine industry.

Research vessels may play a key role to reduce the fragmentation of the European ocean research through a more efficient use of the existing vessels and by improving co-operation and co-ordination of European fleets at a regional level.

Good opportunities are, besides the existing collaboration groups (e.g. OFEG), the new vessels, where an effort has to be done for joint vessels or for establishing concrete coordinations.

Thank you

