

# ICES WGRMES REPORT 2016

SCICOM STEERING GROUP ON ECOSYSTEM PROCESSES AND DYNAMICS

ICES CM 2016/SSGEPD:11

REF. SCICOM

## Interim Report of the Working Group on Resilience and Marine Ecosystem Services (WGRMES)

13–15 June 2016

Porto, Portugal



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea

Conseil International pour  
l'Exploration de la Mer

## **International Council for the Exploration of the Sea Conseil International pour l'Exploration de la Mer**

H. C. Andersens Boulevard 44–46  
DK-1553 Copenhagen V  
Denmark  
Telephone (+45) 33 38 67 00  
Telefax (+45) 33 93 42 15  
[www.ices.dk](http://www.ices.dk)  
[info@ices.dk](mailto:info@ices.dk)

Recommended format for purposes of citation:

ICES. 2017. Interim Report of the Working Group on Resilience and Marine Ecosystem Services (WGRMES), 13–15 June 2016, Porto, Portugal. ICES CM 2016/SSGEPD:11. 7 pp.

For permission to reproduce material from this publication, please apply to the General Secretary.

The document is a report of an Expert Group under the auspices of the International Council for the Exploration of the Sea and does not necessarily represent the views of the Council.

© 20187 International Council for the Exploration of the Sea

## Contents

---

Executive summary .....	2
1 Administrative details .....	3
2 Terms of Reference.....	3
3 Summary of Work plan .....	5
4 List of Outcomes and Achievements of the WG in this delivery period .....	5

## Executive summary

---

The Working Group on Resilience and Marine Ecosystem Services (WGRMES) was established in response to the high priority research areas of the ICES Science Plan: “Development of options for sustainable use of ecosystems”. It is also transversally related to the first and second thematic areas “Understanding Ecosystem Functioning” and “Understanding Interactions of Human Activities with Ecosystems”. After the first meeting in Vigo, Spain, 12–13 May 2015, the WGRMES second meeting was successfully held in Porto, Portugal, 13–15 June 2016, with 14 participants representing 5 countries.

During the meeting, members of the WGRMES addressed each of the four priorities of the ToRs: a) Marine ES under the Blue Growth Agenda and socioeconomics of marine ES; b) Synergies and trade-offs between marine ES; c) Small-scale fisheries and marine ES; and d) Social transformations of marine social-ecological systems (new ToR). Under these four topics, the WGRMES decided to identify and investigate what research priorities are key to advance in the development of the scientific knowledge that impact the spatial distribution of marine ES at multiple scales (local, regional, national and international). Within each topic, members of the WGRMES started to work on one scientific paper that will be developed during 2016.

The WGRMES organized a meeting with the regional government of Galicia (Xunta de Galicia) to jointly develop a Regional Strategy of Marine Ecosystem Services in Galicia (NW Spain). The development of the document and the strategy is currently underway and preliminary outcomes will be presented at the next WGRMES meeting (2017).

The group has started to develop two databases for ICES with detailed information based on the ToRs. The *Cultural Marine Ecosystem Services Dataset* includes information about cultural marine ES globally. This research is the first contribution directly related to cultural services in the marine science. This work includes a new CES framework for practical application in the marine and coastal environment by managers and decision makers. In addition, the dataset provides an overview of the state of the art of marine and coastal CES research worldwide; it identifies key factors/variables to take into account in marine and coastal CES assessments, and it also analyses the main drivers of change in marine and coastal CES potentials, flows, and demands.

The *Social Transformation Dataset* provides a high-quality, descriptive, open-source information resource for the scientific community, ecosystem managers and the sectors related to the marine ecosystem (i.e. fisheries, aquaculture and canning industry). This database provides the basis for future inclusions of case studies in order to create a repository of knowledge on this topic. The dataset includes key information on 20 of the most common attributes that helped to evaluate whether social transformations can be applied to marine SES.

Preliminary results of the Social Transformation Dataset have been presented at the CES/PICES Symposium on "Understanding marine socio-ecological systems: including the human dimension in Integrated Ecosystem Assessments" held in Brest, France, 30 May – 3 June 2016. New results of the Cultural Marine Ecosystem Services dataset will be presented at the “European Ecosystem Services conference” that will take place in Belgium, 19–23 September 2016.

## 1 Administrative details

<p><b>Working Group name</b> Working Group on Resilience and Marine Ecosystem Services (WGRMES)</p> <p><b>Year of Appointment within current cycle</b> 2015</p> <p><b>Reporting year within current cycle (1, 2 or 3)</b> 2</p> <p><b>Chair(s)</b> Sebastian Villasante, Spain Gonzalo Macho Rivero, Spain</p> <p><b>Meeting dates</b> 13–15 June 2016</p> <p><b>Meeting venue</b> Porto, Portugal</p>
--

## 2 Terms of Reference

TOR	DESCRIPTION	BACKGROUND	SCIENCE TOPICS ADDRESSED	PLAN DURATION	EXPECTED DELIVERABLES
a)	Identify the emerging tools and methodologies of socio-economic dimension of marine ES	Information and data on marine ES is scarce and not organized. Links to ICES Science Plan 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> thematic areas, and WGs described above.	Resilience properties of marine ES. Marine living resource management tools	2 years	-Interim report after 1 year -List of potential needs from clients and stakeholders from an online questionnaire -Theme Session at ACS-Conference Spain (2014) -Special Issue " <i>Resilience and marine ecosystem services</i> " ICES Journal of Marine Science (to be published during 2015) -Scientific paper about research priorities of marine ES in Europe
b)	Understand the dynamics of spatial distribution and potential conflicts between marine ES and users	Regional and local data is lacking in Europe. Links to ICES Science Plan 1 <sup>st</sup> and 2 <sup>nd</sup> Thematic Areas; and WGs described above.	Biodiversity and the health of marine ecosystems. Marine spatial planning.	3 years	-Interim report after 2 years -Scientific paper about spatial distribution of marine ES in ICES ecoregions -Create a Database for ICES with detailed information of

					ecosystem services locations by using case studies across ICES ecoregions
c)	Economic valuation of marine ES under a changing climate	The analysis of spatial economic valuation patterns will provide robust scientific evidence on how services are distributed across the seascape. Links to ICES Science Plan 3 <sup>rd</sup> Thematic Area; and WGs described above.	Socio-economic understanding of ecosystem goods and services.	3 years	-Interim report after 2 years -Create a Database for ICES with detailed information of economic valuation of marine ecosystem services -Theme Session <i>"Managing marine ecosystem services in a changing climate"</i> at 2015 ICES Conference (Denmark) -Scientific paper about the socioeconomic contribution of marine ES to coastal communities in ICES ecoregions -Plan a Workshop to inform policy makers and clients -Plan to publish a Special Issue <i>"Impacts of climate changes on marine ES"</i>
d)	Understand the social consequences of changes in ES, including "social transformations"	Creation of a conceptual framework for the analysis of social transformations associated with changes in marine ES. Identification of fundamental and critical changes which facilitate transformations of social groups. Links to ICES Science Plan 1st, 2nd and 3rd thematic areas, and WGs described above and below. Links to the Strategic Initiative on the Human Dimension in Integrated Ecosystem Assessments	Human understanding of ocean's uses		-Interim report after 2 years -Position paper about social changes and marine ES. -Create a Database for ICES with detailed information about transformations and marine ES
e)	Understand the ecological, economic, cultural and social factors underlying the use of marine ES	Spatial patterns of socio-economic factors are key to understand the use of ES. Attitudes and perceptions towards marine ecosystem services. Links to ICES Science Plan 3 <sup>rd</sup> Thematic Area, and WGs described above.	Socio-economic understanding of ES.	3 years	-Interim report after 2 years -Create a Database for ICES with detailed information of socio-economic uses of ES by using different case studies across ICES ecoregions -Scientific paper on attitudes and perceptions about the economic, social and cultural factors influencing marine

			ES in ICES ecoregions -Potential participation of the WGREMS in EU funding call for research project
f)	Inform decision makers on alternative strategies for the use of ES under different scenarios	Decision makers have limited knowledge and capacity to understand how they may manage complex interactions between ES. Links to ICES Science Plan 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> thematic areas, and WGs described above.	Socio-economic understanding of ES. 2-3 years -Interim report after 2 years -Development of guidelines to manage marine ES for policy makers and industry -Plan a Workshop to inform policy makers and clients at ICES Secretary (Denmark).

### 3 Summary of Work plan

Year 1	Review of existing methodologies and tools of socio-economic dimensions of marine ecosystem services.
Year 2	Spatial estimates of economic valuation of marine ecosystem services.
Year 3	Understanding of ecological, economic, cultural, social factors and uses of marine ecosystem services and locations.

### 4 List of Outcomes and Achievements of the WG in this delivery period

#### Theme sessions at ICES ASC

A Theme Session at ACS ICES Conference 2015 in Denmark entitled “*Small-scale fisheries under data poor scenarios*” was co-organized by C. Pita, J. Pascual and S. Villasante.

#### Key publications in scientific journals

Rivero-Rodriguez, S., Villasante, S. 2016. What are the research priorities for marine ecosystem services? *Marine Policy* 66:104–113.

Villasante, S., Lopes, P. Coll, M., 2015. The role of marine ecosystem services for human well-being: Disentangling synergies and trade-offs at multiple scales. *Ecosystem Services* 17:1-4.

Coll, M. *et al.* (including Villasante). 2015. Modelling dynamic ecosystems: venturing beyond boundaries with the Ecopath approach. *Reviews in Fish Biology and Fisheries* 25(2): 413-424.

#### Organization of Special Issues

- Co-organization of a Special Issue (SI) “*Synergies and trade-offs between marine ecosystem services*” in the Journal *Ecosystem Services*, by S. Villasante, M.Coll and P. Lopes.
- Co-organization of a SI “*Small-scale fisheries under data poor scenarios*” in the Journal *Marine Policy*, by C. Pita, J. Pascual and S. Villasante.

- Co-organization of a SI “*Operationalizing marine and coastal ecosystem services*” in the International Journal of Biodiversity Science, Ecosystem Services & Management, by J. Rodrigues, S. Villasante, V. Drakou, C. Liqueste.

### **Advisory outcomes**

Members of the WGRMES have been organized a meeting with the regional government of Galicia (Xunta de Galicia) to jointly develop a Regional Strategy of Marine Ecosystem Services in Galicia (NW Spain). The development of the document and the strategy is currently underway and preliminary outcomes will be presented at the next WGRMES meeting (2017).

### **Methodological developments**

#### *Datasets*

The WGRMES has started to develop two databases for ICES with detailed information based on the ToRs. The *Cultural Marine Ecosystem Services Dataset* includes information about cultural marine ES globally. This research is the first contribution directly related to cultural services in the marine science. This work includes a new CES framework for practical application in the marine and coastal environment by managers and decision makers. In addition, the dataset provides an overview of the state of the art of marine and coastal CES research worldwide, it identifies key factors/variables to take into account in marine and coastal CES assessments, and it also analyses the main drivers of change in marine and coastal CES potentials, flows, and demands.

The *Social Transformation Dataset* provides a high-quality, descriptive, open-source information resource for the scientific community, ecosystem managers and the sectors related to the marine ecosystem (i.e. fisheries, aquaculture and canning industry). This database provides the basis for future inclusions of case studies in order to create a repository of knowledge on this topic. The dataset includes key information on 20 of the most common attributes that helped to evaluate whether social transformations can be applied to marine SES.

Preliminary results of the Social Transformation Dataset have been presented at the CES/PICES Symposium on “Understanding marine socio-ecological systems: including the human dimension in Integrated Ecosystem Assessments” held in Brest (France) on 30 May – 3 June 2016. New results of the Cultural Marine Ecosystem Services dataset will be presented at the “European Ecosystem Services conference” that will take place in Belgium on 19–23 September 2016.

### **Progress report on ToRs and workplan**

The WGRMES decided to advance in the understanding of social changes experienced by users and managers of marine ecosystem services which are considered key to analyse the human dimension of the oceans (new ToR d: *Social transformations of marine socio-ecological systems*). The WGRMES decided to create a new conceptual framework which will guide the analysis of social changes associated with marine ES in order to identify fundamental and critical changes which facilitate transformations of social groups.

In order to exchange scientific information and increase the cooperation between ICES WGs, the WGRMES also discussed potential topics to enhance cooperation with the



WGSEDA, WGEAWESS and WGCOMEDA around the economic, social and governance dimensions of the Marine Strategy Framework Directive, which will be further developed during this year.

### **Funding**

Members of the WGRMES decided to promote initiatives to get funds for the mobility of the members as well as to develop specific tasks of the ToRs. The WGREMS agreed to participate in the following actions:

- Xunta de Galicia (Spain) Call for networks (Sep, 2016)
- ERC-Consolidator Grant (Feb, 2017)
- COST Action (Dec, 2016)
- UNESCO Chair (Dec, 2016)
- Other potential calls: INTERREG, Science for Nature and People Partnership (SNAPP)