



GESAMP

Joint Group of Experts on the
Scientific Aspects of Marine
Environmental Protection

GESAMP 46/4/4
12 July 2018
ENGLISH ONLY

46th session
Agenda item 4

PLANNING OF GESAMP ACTIVITIES: MARINE GEOENGINEERING

Report of the Co-Chairs of Working Group 41

Activities of the working group

1 Since the last GESAMP meeting in September 2018, the co-chairs of Working Group 41 finalised the report of its work and submitted it to GESAMP in early December 2018. Following some comments from the GESAMP Chair suggesting a minor re-structuring of some sections, the report was completed in mid-December 2018. The report, that includes an executive summary, was subsequently published in March 2019. A short summary of the main findings was recently published as a Comment in Nature (see <https://www.nature.com/articles/d41586-019-01790-7>).

Workshop from 26 to 27 March 2019

2 Following discussions between the co-chairs and the IMO Technical Secretary of GESAMP Mr. Fredrik Haag, and the availability of a small amount of money from the Government of Canada, it was decided to hold a small workshop at IMO in late March 2019 to focus on the societal issues of marine geoengineering involving non-GESAMP WG experts from the humanities, mainly from the United Kingdom with some participants from Europe. The idea was that the workshop would enable the next phase of WG 41 work. The objectives for the workshop were:

- a. To develop an appreciation of where the social sciences stand in terms of being able to contribute substantively to the work of GESAMP WG41, and to identify where the knowledge gaps are in marine geoengineering.
- b. To think about ways and means that would allow the WG to best benefit from the different perspectives that the social sciences offer.

3 The workshop participants were:

Chris Vivian	Co-Chair of GESAMP Working Group 41 (WG 41)
Emily Cox	Cardiff University
Robert Bellamy	University of Manchester
Catherine Redgwell	University of Oxford
Timo Goelsch	Kiel University
Miranda Boettcher	IASS Potsdam
Andrew Birchenough	IMO Technical Secretary of GESAMP WG 41
Chrysanthe Kolia	GESAMP Administrative Coordinator

Participation by Skype:

Philip Boyd	Co-Chair of GESAMP WG 41 - University of Tasmania
Jeffrey McGee	University of Tasmania (environmental law)
Kerryn Brent	University of Tasmania (environmental law)
Mike Elliott	University of Hull
Peter Kershaw	Chair of GESAMP - introductory presentation on GESAMP.

4 Attendees were asked to provide Initial thoughts on the current thinking on relevant insights from their fields of expertise for the marine context of geoengineering in the following fields (based on advice from two WG 41 members with expertise in societal issues, namely Timo Goeschl (environmental economics) and Miranda Boettcher (political science)):

- International marine law – Catherine Redgwell
- Public policy – Rob Bellamy
- Science & Technology Studies/Technology Assessment - Rob Bellamy
- Environmental economics - Timo Goeschl
- Public perception of technologies – Emily Cox
- A marine systems analysis approach – Mike Elliott

5 The group had a useful and fruitful discussion about the societal issues that essentially indicated that we needed to take this broad range of perspectives into account to better frame the holistic assessment of marine geoengineering approaches.

6 In the concluding presentation, Mike Elliott gave a talk on an “integrated marine management systems analysis approach” and why it is needed for the assessment of complex problems in the marine environment. All tools, mechanisms, decisions can be brought together by creating a system analysis framework. This framework can then be applied to the many facets of marine geoengineering and will enable us to better crosslink our different disciplinary lenses. Mr. Elliott outlined possible mapping approaches to represent system elements and connections. The systems analysis approach was developed for integrating social sciences with ecological risk assessment and management methods. It was underpinned by the DAPSI(W)R(M) (pronounced dap-see-worm) framework sub-system. The DAPSI(W)R(M) framework was developed in order to understand the complexity of marine systems, with the understanding that if managed sustainably, the marine environment will deliver a range of ecosystem services.

7 The framework presented was seen as a complex systems analysis and there was a general consensus that a systems approach framework would be useful to guide further work of the GESAMP WG. Such a framework allows for diverse opinions to be weighed in different ways and to be transparent and reflective of reality. It was suggested that WG 41 could use scenario development and real case studies e.g. ocean iron fertilization, to test the framework.

8 Unfortunately, the group was unable to get attendance by experts covering some societal issues that we wished to cover, including ethics, security and international relations. However, the participants discussed these subjects briefly and which are currently being followed up with queries to relevant experts to seek coverage of those issues.

9 The workshop report will be circulated as a separate document.

Future membership of the Working Group

10 The co-chairs are currently reviewing the membership of the WG in the light of both the suggested way forward for the WG in the draft report and the outcomes of the March 2019 WG 41 workshop. In particular, they are considering new members to cover non-natural science issues and wider geographic coverage. A number of existing members will be leaving the WG as it transitions from its initial focus – primarily on the natural sciences – to a broader suite of disciplines.

Action requested of GESAMP

11 GESAMP is invited to consider the information provided and to take action as appropriate.