

The Section on *Human Dimensions of Marine Systems*

The Section on Human Dimensions of Marine Systems (S-HD) held its first meeting on October 12, 2012, from 9:00–18:00 h in Hiroshima, Japan. Drs. Mitsutaku Makino and Keith Criddle acted as meeting co-chairmen. The meeting began with brief self-introductions (*S-HD Endnote 1*) and the adoption of the meeting agenda (*S-HD Endnote 2*).

AGENDA ITEM 2

Background and Terms of Reference

Dr. Mitsutaku Makino provided a succinct review of the formation and activities of the Study Group on *Human Dimensions* (SG-HD), and key findings and recommendations of the final Study Group report were summarized. The work of SG-HD and the final report (PICES Scientific Report No. 39) provided impetus for formation of S-HD. The objective and Terms of Reference of S-HD were described. The first two TORs are the principle mission of S-HD, the third and fourth TORs deal with connections to FUTURE and cooperation with other international research organizations through, for example, organization of a symposium on human dimensions of marine ecosystems.

AGENDA ITEM 3

Presentations on work related to the S-HD objective and suggestions for activities

Each member provided a description of his/her current projects and, in some instances, the current projects of his/her research groups. The breadth of topics was exciting as was the clear overlap in interests and synergies among S-HD members in attendance. Ideas suggested for S-HD activities and S-HD member collaborations included:

- Sharing information about domestic and international markets for seafood;
- Identifying categories of information that managers and biologists need to better utilize input of social scientists;
- Identifying areas of public concern about marine ecosystems and mechanisms for scientists to provide information needed for making informed policy choices;
- Characterizing and anticipating technological evolution as it affects fishing power, processing, supply chains, and communities;
- Developing a report that describes how linkages between ecosystem services and wellbeing are conceived in PICES countries;
- Developing/sharing decision support tools;
- Developing a report that describes how social implications of conservation measures vary within and across PICES member countries and identifying commonalities;
- Developing a comparative analysis of the role that governance mechanisms and social institutions play in the value of ecosystem services and wellbeing;
- Comparative analysis of national/regional values for seafood;
- Comparative analysis of national/regional constituents of wellbeing.

AGENDA ITEM 4

Discussion of Terms of Reference and plans for Year 1

Human wellbeing and ecosystem services in marine social-ecological systems (TOR 1)

The PICES-MAFF project will seek to begin addressing this TOR using a multidimensional assessment method drawn from recent work in positive psychology. Section members suggested that other methods of

analysis, *e.g.*, key informant interviews, workshops with group discussions (voting on importance of linkages), and expert assessment with feedback, could also be used either in combination with the work in positive psychology or in stand-alone studies to illustrate the relative strengths of the different mechanisms for elucidating information on linkages between ecosystem services and wellbeing for different categories of stakeholders and resource managers. It was also suggested that it might be informative to include consideration of mediating structures (*e.g.*, governance mechanisms) as they affect the quality of ecosystem services, how they affect wellbeing, *etc.* S-HD supported holding a 1-day Topic Session on “*Marine ecosystem services*” (*S-HD Endnote 3*) at PICES-2013.

Social and economic impacts of climate-induced changes in marine ecosystems (TOR 2)

The disciplines and analytic methods outlined in Table 3.1 of the SG-HD final report were reviewed and discussed. It was agreed that although the list is not comprehensive, it includes a reasonably complete listing of the major analytic tools and approaches that the social sciences can contribute to assessment of the demand for ecosystem services, the governance of marine SES, and resultant levels of wellbeing of individuals and their communities. It was, however, noted that the list only provides a cursory representation of non-fishery uses of marine ecosystems, such tourism, marine transportation, marine pollution/debris, *etc.* and aligned tools, such as Marine Spatial Planning/Ocean Zoning. It was agreed that developing a list of indicators of ecosystem services is a worthy goal for Year 1, with outcomes to be presented at the S-HD meeting during PICES-2013.

Results from Study Group on Communication (TOR 1)

The recommendations included in the final project report for Study Group on *Communication* (see SG-COM in the 2009 Annual Report) were reviewed for their potential applicability to S-HD activities and products and as an example of the scope of activities typical of a PICES section.

Annual work plan

Newsletter—S-HD will provide regular contributions to the PICES Press newsletter (2X/year). These contributions will illustrate what the social sciences can contribute to a holistic understanding of marine social-ecological systems (SES). In the first newsletter contribution, Dr. Makino will summarize the SG-HD report. The second contribution, organized by Dr. Ron Felthoven, will describe social indicators recently adopted by the U.S. NMFS. In the future, the contributions will be organized around topics or issues rather than by discipline. These contributions might include interpretive summaries of hot topics recently published in the social science literature as they pertain to the sustainable SES.

Symposium—the TORs specify that S-HD will sponsor a symposium. It was agreed that it would be most useful to organize this symposium to take place in 2015 or 2016. It is expected that the symposium would be 2-3 days long and might be in partnership with, *e.g.*, IMBER, ESSAS, ICES, or FAO. Section members expressed concern that the symposium be structured to draw an audience representing the array of PICES interests in ecosystem services rather than a narrow audience of social scientists.

Topic Session at PICES-2013—as described above, S-HD members will work with the co-convenors of the proposed topic session on “*Marine ecosystem services*”.

Other PICES-2013 activities—S-HD may collaborate with S-HAB to develop a workshop with Canadian First Nations peoples on coastal pollution, nearshore subsistence resources, and the wellbeing of communities and societies. There might also be collaboration on a session involving trends in coastal marine pollutants, toxins, and the value of ecosystem services.

S-HD Endnote 1**S-HD participation list**Members

Keith Criddle (USA, Co-Chairman)
 Ekaterina V. Golovashchenko (Russia)
 Alan Haynie (USA, alternate for Ron Felthoven)
 Masahito Hirota (Japan)
 Juri Hori (Japan)
 Ekaterina Kurilova (Russia)
 Olga N. Lukyanova (Russia)
 Mitsutaku Makino (Japan, Co-Chairman)
 Grant Murray (Canada)
 R. Ian Perry (Canada)

Observers

Takayomi Kaneko (Japan)
 Denis Kotsyuk (Russia)
 Pavel B. Mikheev (Russia)
 Robin Brown (Canada)
 Tetsuo Yanagi (Japan)

S-HD Endnote 2**S-HD meeting agenda**

1. Opening, introductions, and agenda
2. Background of S-HD and the affirmation of TOR
3. Member presentations on their work relating to the S-HD objective and their suggestions for S-HD activities
4. Discussion of TORs and planning for Year 1
 - Human wellbeing and ecosystem services in marine social-ecological systems (TOR 1)
 - Social and economic impacts of climate-induced changes in marine ecosystems (TOR 2)
 - Results from SG-Com (TOR 1)
 - Annual work plan and newsletters (including session proposal)
 - Relationship/synergy with PICES/MAFF project
5. Concluding remarks

S-HD Endnote 3

Proposal for a 1-day Topic Session on “*Marine ecosystem services and the contribution from marine ecosystems to the economy and human well-being*” at PICES-2013

Marine ecosystem services are the benefits people obtain from the sea and ocean. Since the UN Millennium Ecosystem Assessment reports were published in 2005, the concept of ecosystem services has been broadly accepted by politicians, scientists, developers and the public. When politicians make policy decisions, they should know the value of the marine ecosystem services involved, and how much economic development and human well-being the marine ecosystem may support. As scientists, we have the responsibility to give the answers or the best estimates to these questions. The goals of this session are to provide scientists with a platform to exchange results from research on marine ecosystem services and to show how they contribute to the economy and human well-being. In turn, these research activities will be a demonstration of the contributions and significance of the work being done on this topic within PICES communities, including marine-related research institutes, universities, and management agencies, to marine science and national economies.

Sponsoring Committee(s): BIO/FIS

Potential Co-sponsors: IMBER

Convenors: Shang Chen (China), Keith Criddle (USA), Ekaterina Golovashchenko (Russia), Mitsutaku Makino (Japan), Jungho Nam (Korea), Minling Pan (USA) and Ian Perry (Canada)

Potential invited speakers: TBA