

REPORT OF THE STUDY GROUP ON *HUMAN DIMENSIONS*

Background and Terms of Reference

The Implementation Plan for the new PICES integrative science program on Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems” (FUTURE) calls for PICES scientists to make the societal implications of their science more explicit and accessible through long-term engagement and communication activities among scientists, decision makers, stakeholders, and across sectors. Because different marine sectors view ecosystems in terms of their own economic, cultural and societal needs, the objective of ecosystem conservation is “a societal choice” (Principle 1 of the Ecosystem Approach of the Convention on Biological Diversity). therefore, the social significance of predicted impacts from climate or ecosystem changes, and the types of information, advice and guidance that might be requested of FUTURE might differ from country to country and sector to sector.

The objective of the Study Group on *Human Dimensions* (SG-HD), established at PICES-2009 in Jeju, Korea, under the direction of Science Board (Decision 09/S7/(iii)), is not to design management systems or planning and outreach steps, but to review the role of social sciences practices applied in decision-making in marine sectors around the world. In order to fully utilize the limited time frame of the Study Group (one year), the main focus will be on ecosystem-based fisheries management (EBFM).

The Study Group intends to:

- Review how social science has been used/applied globally and regionally in EBFM, and the theoretical basis for these practices;
- Review the social scientific tools and information available for EBFM in PICES member countries;
- Develop an inventory of practices for use of social economic information appropriate to the circumstances in each PICES member country (the term “best practice” is not used because it is expected that what is considered “best” will vary and be determined according to the circumstances in each of PICES member country);
- Prepare a final report on activities and findings of the Group and make recommendations on the desirability of establishing an expert group related to socio-economic sciences within PICES, and on the role of such a group. For example, based on sound social and economic science, the potential expert group should first survey/assess the needs of potential stakeholders for FUTURE products, and scientifically clarify differences in societal objectives among stakeholders in different sectors and member countries.

The approved membership of the Study Group can be found in *SG-HD Endnote 1*.

Study Group process

SG-HD completed, or will complete, the following tasks, as described in the seven steps shown below.

1. April 15, 2010: A draft table of categories and tools in social sciences was made.
2. June 23, 2010: Each Study Group member reviewed applications/experiences of social science tools for EBFM in his/her country.
3. June 24–25, 2010: An inter-sessional meeting was held in Yokohama, Japan, to review results of each member country’s applications/experiences. Based on the results, a table of categories in social science disciplines and their tools was finalized.
4. end of August 2010: Based on the results from the Yokohama meeting, the Chairman proposed that each Study Group member conduct a review on his/her specialty, and make a brief report.
5. beginning of October 2010: Draft manuscript of final report (review results, inventory of practices, and recommendations) was circulated by the Chairman to the Study Group.
6. October 22, 2010: Final SG-HD meeting was held at PICES-2010 in Portland, U.S.A. to finalize the contents of the report.

7. End of January 2011: Submit the final report to the PICES Secretariat.

Results of activities in 2010

SG-HD first discussed the “conventional” social science disciplines related to EBFM (Step 1). They are:

1. Anthropology/Ethnology,
2. Economics (bioeconomics, decision theory, non-market valuation, commons, accounting, *etc.*),
3. Geography/Area studies,
4. Law/Political science,
5. Sociology,
6. Psychology,
7. Inter-disciplinary methodologies (Impact analysis, GIS, management science, *etc.*).

The Study Group also made a table of social scientific tools in each discipline which can be applied to EBFM studies.

Each member of the Study Group reviewed applications of the social scientific tools identified in Step 1, and reported the results at its inter-sessional meeting held in Yokohama in June 2010 (Steps 2 and 3). The travel costs of two participants were covered by PICES, and other expenses were covered by each PICES member country and the Fisheries Research Agency of Japan.

At the Yokohama meeting Canada discussed marine use, demographic analysis, *etc.* in the Pacific North Coast Integrated Management Area (PNCIMA), a guidance document on the use of socio-economic objectives for the creation of MPAs. China presented the new development of Marine Ecosystem Service Evaluation Software, and its application to the Yellow Sea, South China Sea, East China Sea, and Bohai Sea. Social analysis in Sato-Umi (village sea) initiatives and institutional analysis of the Shiretoko World Natural Heritage site were summarized by Japan. Korea talked about the application of the IFRAME (integrated fisheries risk assessment, forecasting and management for ecosystems) for large purse seiners and bio-economics for Resource Recovery Plan, *etc.* Russia showed a case study of non-market valuation of ecosystem values at Kamchatka, or economic losses from water pollution in Primorsky Kray. The United States reviewed NOAA’s Annual Stock Assessment, the NEPA Environmental Assessment, and Integrated Ecosystem Assessment in the Puget Sound.

Based on the results of the Step 3 (from the Yokohama inter-sessional meeting), the Study Group members conducted an additional review of social scientific tools for EBFM (Step 4), and discussed the contents of the final report via e-mail (Step 5).

On October 22, 2010, the Study Group held its final meeting at PICES-2010 (Step 6). At this meeting, the detailed structure of the Study Group final report was decided. The Study Group also discussed the role of social sciences in EBFM as follows: 1) to make scientific inputs on how to define/select the goals, objectives, indicators, targets, *etc.*, 2) to make scientific inputs on how to judge/asses the performances of specific EBM measures, 3) to improve the value of bio-physical information (for better understanding by the public, management and fishers), 4) to propose spatial/temporal/organizational scales for EBFM, coordinating with existing institutional scales (stake holders) and natural scientific knowledge.

Finally, the Study Group drafted the recommendations. In order to better understand and communicate the societal implications of the conditions and future trends of North Pacific marine ecosystems (FUTURE vision), it is desirable to organize a new expert group related to social sciences. The Terms of Reference for the new group would include a survey/assessment of the needs of potential stakeholders for FUTURE products, and scientific clarification of differences in societal objectives and needs among stakeholders in different sectors and countries. For example, the new expert group will be engaged in vulnerability analysis, indicators on human dimensions for EBFM, bioeconomics, *etc.* The Study Group also agreed that the new expert group can make a contribution to the next North Pacific Ecosystem Status Report, and organize a symposium on Human Dimensions for EBFM.

The draft of the final report with recommendations will be finished by the end of January 2011 (Step 7). However, because the issue of human dimensions is important and relevant to the FUTURE program (especially to SOFE-AP) and several other groups within PICES, we suggested it is important to circulate this draft to other groups for their comments and suggestions. The revised version, which includes comments, will be submitted to the inter-sessional Science Board meeting (expected to be held in April 2011). Based on the comments received at the inter-sessional meeting, SG-HD will finalize the final report and recommendations for PICES-2011.

SG-HD Endnote 1

SG-HD membership

Shang Chen (China)
Keith R. Criddle (U.S.A.)
David L. Fluharty (U.S.A.)
Masahito Hirota (Japan)
Dohoon Kim (Korea)
Olga N. Lukyanova (Russia)

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Jongoh Nam (Korea)
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