

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

**Nineteenth Session of the IOC Committee on International Oceanographic Data and Information
Exchange (IODE-XIX)
Trieste, Italy, 12-16 March 2007**

**Group of Experts – Biological and chemical data
management and exchange practices (GE-BICH)**
(Dr Edward Vanden Berghe - Drs Sergey Konovalov & Gwenaëlle Moncoiffé)

1. Introduction

GEBICH has been founded by IODE following two major events, which are the International Workshop on Oceanographic Biological and Chemical Data Management held in Hamburg, Germany in May 1996 and the Sixteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE) held in Lisbon, Portugal, 31 October - 8 November 2000. Both meetings pointed at the need to improve the quantity and quality of chemical and biological data available to the scientific community and to develop standards for biological and chemical oceanographic data.

GEBICH, as stated in the report of the 1st GEBICH meeting, primarily aims to (i) document and distribute information on hot issues related to oceanographic biological and chemical data collection, processing, management, and application, (ii) encourage holders of biological and chemical oceanographic data to compile inventories and submit their data to data centres, and (iii) support the process that should result in better quality of newly collected and rescued historical data.

2. Objectives

The objectives of the group were initially adopted by IODE-XVI, and extended during the first and second sessions of the GE. These objectives are:

- to document the systems and taxonomic databases and inventories currently in use in various data centres;
- to document the advantages and disadvantages of different methods and practices of compiling, managing and archiving biological and chemical data;
- to develop standards and recommended practices for the management and exchange of biological and chemical data, including practices for operational biological data;
- to encourage data centres to compile inventories of past and present biological and chemical data holdings;
- to encourage data holders to contribute data to data centres for the creation of regional and global integrated oceanographic databases incorporating physical, chemical and biological data.

Following the third session of the group held in Oostende, Belgium in November 2006, it has been proposed to establish a web-based portal to help GEBICH disseminate information about its areas of interest, maintain an up-to-date account of achievements and progress in these areas, and promote the utilization of the results of the GE's work by the wider community. In addition to the above listed activities, GEBICH will help identify gaps in the availability of and requirement for guidelines, standardisation, and informatic tools in the area of biological and chemical data collection, processing, management, and applications, and that it will communicate this to the world-wide community of data managers and data users via its web portal. GEBICH should not and it actually cannot effectively perform the tasks of filling in these gaps itself but will liaise closely with international programmes, organisations, and individuals in order to do so. Instead, GEBICH review the tasks and summarize the results of other programs, thus making its activity valuable for the existing programs, for data managers and, what is more important, for data users.

Thus, the additional planned objectives are:

- to create and keep updated GEBICH web "portal" making all results from the GE's work available to a wider community of data managers and data users;
- to contribute results of GEBICH activity to OceanTeacher making results from the GE and from other programmes available to education of data managers and data users.

3. Past Activities

Three meetings of the expert group have been held since its creation. The third one, during the past intersessional period of the IODE, was hosted by the IODE, Oostende, from 27-28 November 2006. The Session was attended by, in addition to its regular members, representatives from ETI BioInformatics, OBIS, GBIF/TDWG, ICES, and FAO, as well as by the IODE Chair. The report of the third Session (http://www.iode.org/index.php?option=com_oe&task=viewDocumentRecord&docID=351) provides detailed information on progress made and issues discussed.

The OBI-I conference was held at the beginning of the intersessional period. The conference was very successful and resulted in the publication of 9 papers in the prestigious Marine Ecology Progress Series. Some of the remaining presentations are available online and will be published in conference proceedings due to be completed soon.

Other planned intersessional activities included (i) contribution to Ocean Teacher, (ii) raising awareness on socio-economic importance of data management, (iii) collaboration with OBIS, GBIF, ITIS, and FAO, (iv) migration of URMO to IODE project office, (v) collation of guidelines on data quality assurance and quality control, (vi) pilot projects on taxonomic nomenclators and distributed systems, and (vii) gathering information on biological and chemical data management within IODE member states. Some progress have been made on some of these activities. However most of this work is still on-going and all these activities will remain areas of priorities for GEBICH

In addition to the continuation of the activities listed above, the Group detailed work plan for the next intersessional period (November 2006- November 2008) focuses on:

(i) creation of an XML registry; (ii) continued collaboration with ICES and in particular liaise closely with the newly formed WGDIM; (iii) initiate collaboration with CIESM and PICES; (iv) closer collaboration with FIRMS/FAO in particular with regards to work on marine habitats classification (alongside OBIS), marine environmental ontologies, and the provision of pointers to marine environmental data and information resources relevant to fisheries in the

frame of the NeON project; (v) liaise with SEADATANET regarding work on data quality control flags; (vi) liaise with MarBEF and ICES regarding compilation/recommendation of standard procedures; (vii) assess applicability to marine sciences of GBIF's documents on biodiversity data quality control; (viii) provide feedback on the ISO19115 marine community metadata profile; (ix) keep a close interest on the work of TDWG on Globally Unique Identifiers, Life Sciences Identifiers and Document Object Identifiers; (x) prepare the "Ocean Biodiversity Informatics-II" Conference.

In order to support this ambitious work plan, the idea of creation of GEBICH web portal, as a part of IODE web site, has recently arisen. The exact format and structure still needs to be discussed and finalised by GEBICH members. However it is proposed that the members of GEBICH develop a web portal hosted and maintained by IODE that should present both general and specific issues of marine biology and chemistry. First of all, this web portal must structure and scale the existing knowledge and gaps presenting the present-day situation and encouraging various bodies to fill the gaps. Besides, this GEBICH web portal will preserve and make easily available to experts and users the results of the work of GEBICH. Individual members of GEBICH may and will carry out small scale projects, communicating with other projects and programmes in order to review current activities, to identify and estimate existing gaps in data, data management and data processing. They may also contribute to filling the existing gaps, though this work should essentially be carried out with and within other programmes. It is envisaged that the web portal will also enable GEBICH members to keep track and inform others on progress made in areas of planned activities during the long intervals separating GEBICH's sessions.

The currently discussed structure of this web page include the next sections:

1. A general information and overview the current status of marine biology and chemistry
2. Current scientific problems in marine biology/chemistry
3. Marine XML registry and marine metadata standards
4. Taxonomy/nomenclatures in marine biology
5. Recommended methods for chemical and biological data collection
6. Chemical and biological oceanographic data processing and management facilities
7. Methods of data quality assurance and evaluation for biological and chemical data.
8. Information on actual data sources (NODC, individual and project originated data bases), collectors of marine scientific data (individual researchers, research departments, institutions and projects that collect data)
9. Information on available marine data products and on users of oceanographic data products and services related to biological and chemical research.
10. Information on GEBICH, plans, reports, information of meetings and activities.

Up until now, GEBICH has concentrated its efforts on biological data and more particularly on taxonomy/nomenclatures. Its past activities have been distributed in three main areas:

- develop a strategy to gather information on biological and chemical data management activities within IODE's member states,
- organise international conferences or symposia to promote awareness and interactions in the fields of ocean biological data management and biodiversity informatics,
- establish close collaboration with organisations and initiatives involved in key activities related to the standardisation, collation, referencing and distribution of biological/biodiversity data, and whose work is highly relevant to the objectives of the GEBICH group.

Taxonomy/nomenclatures issues are of extreme importance for the present-day biological marine data management. These issues, along with other biological tasks will remain a focus of GEBICH work in future. Still, following the previous decisions of the group on the need to

look for additional expertise in chemical data management, Dr Sergey K. Konovalov has been invited as a new member of GEBICH. Besides, Dr Sergey Konovalov and Dr Gwenaëlle Moncoiffé have been elected to co-chair GEBICH for the next period balancing biological and chemical issues and activities.

4. Proposed Activities

Activities proposed by GEBICH at its third Session can be summarized as the next:

1. Set up a GEBICH web “portal” for biological and chemical data management
2. Preparation of the Ocean Biodiversity Informatics-II conference (or OBI’07)
3. Promote and instigate the creation of a marine XML registry or repository
4. Continue promoting the submission of biodiversity data to OBIS through the OBI’07 conference but also through GEBICH web pages and through the network of IODE data centres.
5. Maintain a close relationship with OBIS, ICES, FAO, TDGW/GBIF, ITIS, and the MarBEF and SeaDataNet communities; promote the work of these groups/organisations, and collaborate as required.
6. Extend GEBICH work to biological, biogeochemical and chemical ocean data management issues relevant to ecosystem studies and modelling activities; liaise with relevant groups and seek co-operation whenever possible.
7. Liaise with the marine genomics community.
8. Liaise with CIESM and PICES, ICES counterparts for the Mediterranean sea and the Pacific Ocean.
9. Centralise information on on-going initiatives, and existing or novel tools, guidelines, ontologies, gazeteers, metadata standards and processing protocols relevant to biological and chemical data management;
10. Populate the GEBICH web pages and contribute to relevant sections of Ocean Teacher.

5. Work Plan, Timing & Budget

Due to limiting budget, no meeting of the GE will be held in 2007. The Group decided to have its next meeting in 2008. The possible venue that was proposed – Ostend, Belgium (IOC project Office for IODE).

Originally, the OBI 07 meeting was planned to take place in Halifax, Canada, from 27-29 November 2007. After it appeared that this would clash with a CoML meeting in New Zealand, arrangements were placed on hold. After discussion, it was felt that OBI 07 should take place as close as possible to the original date. The local organizer, Bob Branton, was contacted by the chair. Finally the meeting was set on 2-4 October 2007 in Halifax, Canada.

6. Sources of Funding

No external sources of funding are available.

Funding for the 2008 meeting (10,000 US\$) and OBI 07 conference (10,000 US\$) are requested from IODE.

Additionally, funds are requested from IODE to create and keep GEBICH/IODE web “portal” growing and updated (10,000 US\$ for two years, if technical background and assistance is covered by IODE).

Besides, 10,000 US\$ are requested from IODE to cover small scale projects over two years making the results of GEBICH and other international programs a part of OceanTeacher system and IODE teaching courses.

7. Requested Actions from the Committee

- Approve the revised list of GEBICH objectives
- Approve funding of the GEBICH activities

[END]