

**Paper for Consideration by the  
Meso American - Caribbean Sea Hydrographic Commission (MACHC)  
Meeting 17, Belem, Brazil  
Seabed 2030 - Understanding the Shape of the Sea Floor**

<b>Submitted by:</b>	United States of America, and Brazil
<b>Executive Summary:</b>	Proposal for coastal States in the MACHC to provide bathymetric data, material and processing support to help the community meet the goals of the IHO-IOC GEBCO Seabed 2030 Project
<b>Related Documents:</b>	<ul style="list-style-type: none"> <li>a) GEBCO-Nippon Foundation draft publication, Seabed 2030 - The Roadmap for Future Ocean Floor Mapping (Document: <a href="#">LINK</a>, Graphics: <a href="#">LINK</a>)</li> <li>b) IHO Circular Letter 11 of 2016 (CL11/2016), Request for Shallow Water Bathymetric Data (<a href="#">LINK</a>)</li> <li>c) GEBCO Digital Atlas Manager's Report, GGC33/2/4 (GDAMR33), 20 September 2016 (<a href="#">LINK</a>)</li> </ul>
<b>Related Projects:</b>	<ul style="list-style-type: none"> <li>a) IHO-IOC General Bathymetric Chart of the Oceans - GEBCO (<a href="#">LINK</a>)</li> <li>b) IHO Crowd-Sourced Bathymetry Working Group – CSBWG (<a href="#">LINK</a>)</li> <li>c) IHO Data Center for Digital Bathymetry – DCDB (<a href="#">LINK</a>)</li> </ul>

### Introduction/background

1. The shape and depth of the ocean floor forms one corner stone of the geospatial framework that is needed to effectively manage the marine component of a coastal nation. The data is a national and global resource, which with broad use, creates opportunities for operational efficiencies, cost savings and reduction of risk to marine navigation. Providing broad access to data, usable to the public, can help fuel entrepreneurship, innovation, and scientific discovery – all of which improve lives and contribute significantly to job creation. The use of ocean depth data includes scientific research, navigation, exploration, fisheries and tourism, to name just a few. Sharing data regionally allows improved understanding of physical characteristics across large ecosystems and economic activities that transcend national boundaries.

### The need for a global commitment to support improvements to GEBCO Gridded Models

2. The IHO-IOC General Bathymetric Chart of the Ocean (GEBCO) Project provides an open and freely available 30" gridded elevation model of the world's seafloor and landmass. According to GEBCO Digital Atlas Manager's Report (GDAMR33) many scientists have used this model for research purposes. However, this model is unreliable in many areas owing to the lack of direct seafloor measurements. To address the lack of direct measurements, many in the international community have provided data to improve the quality of the model. In the IHO circular letter (IHO CL 11/2016), Member States were invited to provide shallow water bathymetric data from Electronic Navigational Charts (ENC) in order to help improve the GEBCO grid. Prior this request, several countries volunteered ENC sounding data to improve the quality of the model in coastal areas. Significant improvements could be made in the MACHC region if Member States and regional community members contribute more data, and support research and data collection initiatives to increase our common understanding of the oceans.

3. In the opening address of the Future of Ocean Floor Mapping (FFOFM) in Monaco in June 2016, Mr Sasakawa, Chairman of The Nippon Foundation, set forth an initiative to partner with GEBCO to cooperatively work towards mapping 100% of the World Ocean bathymetry by 2030. This initiative led to the formulation of Seabed 2030, a global project within the framework of the General Bathymetric Chart of the Oceans (GEBCO) with the focused goal of leaving no features of the World Ocean floor larger than 100 m unmapped by the year 2030. At the 33<sup>rd</sup> meeting of the GEBCO Guiding Committee, the Seabed 2030 Project was approved. Seabed 2030 sets the goal of collecting, using

and sharing, data of the world's oceans. The project seeks to encourage the data collectors and data managers of governmental, academic and private interests to work together to improve the quality of publicly-available grids of the ocean floor. This project is focused on the goal of compiling a high-resolution, openly available, Digital Bathymetric Model (DBM). This DBM should efficiently provide bathymetric information to end users and leave no features of the World Ocean floor smaller than 100 m unmapped by the completion of the program. The Seabed 2030 project has great potential to create partnerships and cooperation between interested parties, significantly improving our understanding of the sea floor and empower sustainable ocean management in the coming century.

4. Based on GEBCO's successful experiences of working with Regional Mapping Projects, the structure of Seabed 2030 rests on the establishment of two types of new technical mapping centres, a Global Data Assembly and Coordination Center (GDACC) and Regional Data Assembly and Coordination Centers (RDACCs). The regional centers will be responsible for championing regional mapping activities as well as assembling and synthesizing bathymetric information within their prescribed region. The global center will be responsible for producing centralized GEBCO products and centralized data management for non-regionally sourced data. In ocean regions where strong mapping initiative already are operational, Seabed 2030 will strive to avoid duplication and instead work towards fostering a close collaboration for the most efficient use of global resources.

5. The US, and Brazil join other nations in support of improvements to the GEBCO gridded models of the world's seafloor, and note great benefit in supporting their continuing improvement. To do this, nations must make ocean depth data available to the project. One simple way is by sharing ENC soundings, and where national policy allows, sharing full resolution data sets. Several US agencies have provided data and data management resources for improvements GEBCO 30" model, and continue to support the development of crowd-sourced data sharing through the IHO Data Center for Bathymetry Digital (DBDC). These IHO projects establish the framework and encourage data sharing which benefits the global international maritime and oceanographic community.

### **Recommendations**

6. The Meso American-Caribbean Sea Hydrographic Commission (MACHC) Member States and the wider marine data collectors and managers, are encouraged to provide bathymetric sounding data to General Bathymetric Chart of the Ocean (GEBCO) in support of mapping the world's oceans and become active participants of the IOC-IHO GEBCO Seabed 2030 project.

### **Action Required of MACHC**

7. The MACHC is invited to:
- a. note the report;
  - b. Participate as active members of the GEBCO Seabed 2030 project;
  - c. Provide bathymetric data to the IHO DCDB to support mapping ocean areas at high resolution;
  - d. Provide shallow water bathymetric data from Electronic Navigational Charts (ENC) to the IHO DCDB;
  - e. Develop strategies to collect bathymetric data in ocean areas; and
  - f. Take action as seen appropriate.