

Meso American & Caribbean Sea HYDROGRAPHIC COMMISSION
24TH MEETING, 12-15 DECEMBER 2023, PARAMARIBO (SURINAME)
Report of the IHO Secretariat

Submitted by: IHO Secretariat

Executive Summary: This paper reports on activities of the IHO Secretariat that may impact the work of the Meso American and Caribbean Sea Hydrographic Commission.

Status of Membership of the IHO

1. IHO membership now stands at 99. Unfortunately, Serbia and Syria remain suspended from Member States rights. One of the main changes resulting from the entry into force of the revised IHO Convention is that, for States wishing to join the IHO that are already Member States of the United Nations, there is no requirement to seek the approval of existing Member States of the IHO.
2. The non-IHO Member States of the MACHC region are Antigua and Barbuda, Barbados, Belize, Costa Rica, El Salvador, Grenada, Haiti, Honduras, Nicaragua, Panama, Saint Lucia, St Kitts and Nevis, St. Vincent and the Grenadines and The Bahamas. Countries who are Member States of the IMO are encouraged to become IHO members and the IHO respectfully repeats its invitation to those non-IHO Member States to accede to the IHO Convention. The IHO Secretariat, in cooperation with the Department of External Relations of the Government of Monaco, stands ready to assist those non-IHO Member States with the application process for membership of the IHO, as recently done towards several non-IHO Member States in other hydrographic regions, and stands ready to pay High Level Visits to those States in the MACHC region not yet IHO Member States.
3. **Recommendation:** *MACHC is invited to encourage and propose to the IHO Secretariat High Level Visits to those States not yet IHO Member States.*

Decisions of the 3rd Session of the IHO Assembly of interest of MACHC

4. Decision 8: The Assembly agreed on the continuation of conduct of the annual Work Programmes on the basis of the Strategic Plan in place for 2021 – 2026 and directed the Council accordingly. Approved that Goal 1 of the IHO Strategic Plan and its targets shall have the highest priority in the implementation of the 2024–2026 Work Programme; directed IRCC to provide guidance to the MSDI Working Group on the implementation of Goal 2/Target 2.1 through supporting national and regional MSDIWG efforts via RHCs and the continued provision of global thematic layers by means of the existing IHO GIS infrastructure (trusted source, standardized, interoperable); tasked the Secretariat, assisted by the HSSC and IRCC chairs, to continue to measure the effectiveness and the efficiency of the three Work Programmes implementation by means of the Strategic Performance Indicators (SPI) as endorsed by the Council; and tasked the Council with the development of the revised Strategic Plan to be put in place for 2027 – 2032 in compliance with the Planning Cycle and to submit the result for adoption by A-4 in 2026.
5. Decision 13: The Assembly took note and approved the fundamental strategic change introduced by the S-100 framework and approved the Dual Fuel Concept for S-100 ECDIS.
6. Decision 14: The Assembly recognized the need to establish the S-100 Infra Center and approved the foundation of a new Project Team under HSSC with a three-year work plan including the establishment of the S-100 Infra Center and to prepare for the actual implementation period with consideration of the possible location of the Center; and tasked Council to report to the 4th IHO Assembly the progress of its three year operation including the establishment of the S-100 Infra Center.
7. Decision 19: The Assembly approved the proposed IHO Resolution on the recognition of the

Southern Ocean; took note of the consequences on the limits of some global sea areas as a result of recognition of the Southern Ocean; and endorsed the fact that this new Resolution is without prejudice to or limitation of the views of the IHO, any other international body or any IHO.

8. Decision 20: The Assembly recognized the important global maritime issues facing the hydrographic community worldwide and that addressing these issues will require expanded global hydrographic capacity; approved the proposal to establish an ad hoc Project Team under IRCC to explore the possible establishment of reliable alternative funding for activities including capacity building and GEBCO; and authorized Council via IRCC to review progress reports from the Project Team at least annually and provide guidance to the Project Team in preparation to report out to 4th Assembly (A4).

9. Decision 27: The Assembly approved the increase of the value of the Member States contribution share by 3% to 4,145.05 Euro (~120 Euro per share) in one step taking effect in 2024.

Outcomes of the 7th Meeting of the IHO Council

10. In accordance with the decisions of A-3, the Council endorsed the principle that additional funding resources (Decision A3/20 and IRCC15 Decision 41 refer) should be considered for setting up a sustainable technical and administrative infrastructure around S-100 including standards development to meet the S-100 timeline, and in parallel of the establishment of the S-100 Infrastructure Centre, the Council tasked the HSSC to identify the current or emerging components that are critical in the implementation of the S-100 Roadmap that could candidate for being funded by the IHO. The IRC Chair reported that the WENDWG considered the WEND-100 Principles and S-1xx Implementation Guidelines to be in “maintenance mode” and included them as part of the regular agenda to consider updates as S-100 Products and Services mature, whilst on the regional S-100 coordinator’s role, some RHCs requested more guidance on what the role entails. An amendment to include Section 300 in S-11 Part A to describe the Coordinator responsibilities was considered. Some progress was made on measuring the SPI 1.3.1 via a first run of the WEND IGIF Products and Services Matrix that has been completed. IRCC tasked WENDWG to liaise with HSSC on how to mirror the HSSC ISO Cell on S-101 with the following scope: RHC S-101 production/coordination/distribution in the near future.

11. While noting the existing IHO Resolution 2/2014 as amended – Prince Albert the 1st Medal for Hydrography, the Council endorsed the proposal for an annual Champion of Hydrography Award and tasked HSSC and IRCC Chairs supported by IHO Secretariat, to prepare a proposed IHO Resolution for the Champion of Hydrography Award, to be awarded on an annual basis, followed by an IHO CL seeking the approval of IHO Member States on the proposed IHO Resolution.

12. The Council noted the outcome of a scoping team and endorsed the recommendations from the IRCC to establish a *Project Team on Fund Generation of IHO’ Project Initiatives* under the IRCC. IHO Secretariat to issue a CL on the establishment of the IHO FG PT, as soon as the draft TORs and ROPs are finalized by correspondence within the IRCC.

13. The Council agreed to continue with the EWH project led by the CBSC supported by remaining funds and future financial and / or in-kind support. Then, the Council supported by IRCC will develop a proposal on the future framework for an IHO social Programme (incl. Gender Balance in Hydrography) to be submitted to A-4.

14. The Council noted the dashboard (target 2026, WP2 and WP3 SPIs value as of 31 Dec. 2022) allocated to the IHO Secretariat, HSSC and IRCC (IHO Annual Report 2022, Annex B refer) and its update for WP1 as of 1 Oct 2023. The Council welcomed the offer from the Council Vice-Chair to lead a correspondence group consisting of BR, DE, DK, FR, GB, HR, JP, NO, NZ, SE and US on the ways and means to prepare the next IHO Strategic Plan 2027-2032.

15. The Council agreed to prepare an IHO Resolution on Guidelines for *Making IHO Events More Inclusive*, endorsed the principle of considering an initial proposal for a IHO Resolution Guidelines for Making IHO Events More Inclusive to be prepared by an ad hoc drafting group (AU, CL, FJ, NZ, SG, GB, US...), and then tasked the ad hoc drafting group (respectively IRCC) to conduct a survey on

behalf of the Council to assess the feasibility, preference and willingness of MS, WGs, Committees Chairs... (respectively RHCs), to host and attend meeting in the four different modalities (in-person, in-person with live streaming, hybrid, or full VTC).

16. The Council tasked the IHO Secretariat to establish liaison with relevant data providers of MPAs and tasked the IRCC through the MSDIWG to establish a pilot project for the High Sea and MPAs adopted by IMO, to demonstrate the benefits of S-122 for non-navigation purposes.

17. Recommendations:

17.1 MACHC is invited to create the role of regional S-100 coordinator in accordance with the WEND-100 Principles and S-1xx Implementation Guidelines.

17.2 MACHC Chair is invited to evaluate the opportunity to participate with a representative from MACHC to the Project Team on Fund Generation of IHO' Project Initiatives under the IRCC.

17.3 MACHC Members are encouraged to support the continuation of the EWH project through financial and / or in-kind support.

17.4 MACHC is requested to provide the IRCC Chair with their contribution to continue on the measurement of those SPI of regional interest allocated to IRCC.

17.5 MACHC Chair is invited to conduct a survey within the MACHC on hosting and attending meetings in the four different modalities (in-person, in-person with live streaming, hybrid, or full VTC).

Capacity Building Programme

18. The level of activity of the IHO Capacity Building (CB) Programme was clearly affected by the COVID 19 pandemic in 2020 and 2021 showing in 2022 a restart of the activities but some activities still need to carry on to 2023. At CBSC21, the CBSC decided that the funded activities in the 2023 CBWP that are not executed in 2023 could be carried on to the 2024 CBWP. If all CBSC activities are executed by the estimated values as well as the expected income into the CB fund for 2024, and there is no surplus or any additional contribution, the total fund available for 2024 will be 127,962.79 euros. In 2024 the CBWP will go back to the normal situation and funded activities not completed in 2024 will not be carried over to the 2025 CBWP.

19. The CB finance situation will be more difficult in 2024 with the expected reduction of the non-earmarked funds, so it was recognized that it will be very important to share resources and projects and invest in the remote activities, also inter-regionally. The CBSC21 meeting discussed the 2024 CBMP (CB Management Plan (CBMP)), with all the 26 received submissions prioritized by the total of points for each one. Having in consideration the projects with the highest score after the evaluation process and the funding available, the projects to be funded were selected and the 2024 CBWP was approved by the Sub-Committee and then uploaded to the Capacity Building and Technical Cooperation webpage on the IHO website. MACHC has seven funded CB projects in the 2023 CBWP and two in the 2024 CBWP:

- 2023: A-05 Technical Visit to Costa Rica
- 2023: A-09 Technical Visit to Belize (from 2022 A-05)
- 2023: A-11 Technical Visit to Honduras (from 2021 A-03 and 2022 A-11)
- 2023: A-12 High Level Technical Visit to Dominican Republic ((from 2021 A-06 and 2022 A-13)
- 2023: A-13 High Level Technical Visit to Jamaica (from 2021 A-07 and 2022 A-14)
- 2023: P-35 MSI (training on establishment of MSI structure and basic MSI procedure) (former 2022-P9)
- 2023: P-44 Tides Workshop for Spanish Speakers (former 2020 P11, 2021 P-33 and 2022 P-45)
- 2024 - A-04 High Level Technical Visit to Colombia

– 2024: - P-07 Seminar on Raising Awareness of Hydrography

20. In terms of courses managed at IHO Secretariat level in 2023, 2 candidates were selected for 2023/2024 Master of Science Programme in Hydrographic Science at the University of Southern Mississippi (USA), sponsored by the Republic of Korea, 7 candidates (nr. 1 from MACHC region) were selected to participate in the 15th GEOMAC course in Cartography Cat B (see IHO CL 16/2023) sponsored by Nippon Foundation, and 9 candidates (nr. 1 from MACHC region) for 2023 Cat B Hydrographic Survey Programme sponsored by the Republic of Korea were selected (see IHO CL 15/2023). For 2024/2025, the Master of Science Programme in Hydrographic Science at the University of Southern Mississippi (USA), sponsored by the Republic of Korea, was announced with IHO CL 27/2023.

21. On C-55, the PT progressed on the proposal for the future of the IHO C-55 publication, highlighting that the C-55 PT developed a solution for survey status in countries based on CATZOC provided via the RENCS directly to the IHO Secretariat. For non-navigational purposes, data from Seabed2030 can support annual regional and global reporting including Areas Beyond National Jurisdiction (ABNJ). IRCC tasked CBSC to liaise with the RENCS and the IHO Secretariat to investigate which Member States are currently not contributing CATZOC data to the IHO Secretariat via the RENCS and to proceed with the proposed solution as given to IRCC11 (to populate C-55 Status of Survey for Safety of Navigation Purpose).

Empowering Women in Hydrography (EWH)

22. CANADA and IHO signed an Agreement available at <https://iho.int/en/mou-agreements>. The Agreement secures the funds for the period 2021-2024, and finally describes a series of activities and initiatives which will enable more women to participate equitably in the field of hydrography and to assume more leadership roles within the hydrographic community. The project includes outreach, contact and learning, including internships, at-sea experiences, train-on-the-job activities and a Mentoring programme. A specific webpage (<https://iho.int/en/basic-cb-sc-ewh>) has been set up under the Capacity Building Sub-Committee (CBSC) for this project. The third year of the EWH project is going to be completed successfully: an event dedicated to project before the start of A-3, the participation of 6 women hydrographer at A-3, three candidates selected for the 2023 at-sea experience onboard NOAA ships, one candidate selected for the knowledgebase secondment at IC-ENC, the start of the Mentorship programme, the continuation of the interviews to women engaged in hydrography and related sciences and the presence of an EWH Assistant at the IHO Secretariat have been executed.

23. With Letter IOC/VR/22.377/JB/AC/mb dated 9 September 2022, IOC endorsed the project entitled “No. 62.2 - Empowering Women in Hydrography” as a project forming part of the UN Decade of Ocean Science for Sustainable Development 2021-2030.

IHO e-learning Center

24. The IHO e-learning center established at KHOA is now accessible at <https://elearning.iho.int>, or via the IHO website. With reference to the e-Learning Center, the Project Team completed the Guidelines that includes the proposed composition of the Steering Committee. The CBSC endorsed the Guidelines and IRCC approved them. With IHO CL 24/2023 the e-Learning Center Steering Committee was established (MACHC is contributing with a member from Chile), in line with the indications provided in the Guidelines.

25. The first meeting of the Steering Committee was held on 25 September 2023 by VTC. The need to identify or find a way to fulfil the role of the General Manager (GM) was recognised as substantive one. It was agreed that whilst a GM is identified, development of the Centre would be in phases with phase 1 focusing on the Centre being a catalogue of existing eLearning Material or signposting to other eLearning Courses, therefore reducing the current requirement of GM. It was agreed that during Phase 1 (where e-Learning is not added to the system but signposted to) the assessment of training material would not be required only consideration of the source of the material and if it was thought to be authoritative. Going forward, in future phases the appropriate Working Groups and Hydrographic Offices should be approached to review and support material submitted.

26. Recommendations:

- 26.1 MACHC members are invited to continue follow and evaluate the possibility to contribute to the CB Programme, looking forward to implementing also an inter-regional approach.
- 26.2 MACHC members are invited to participate at the EWH project and provide proposals via the specific webpage (<https://iho.int/en/basic-cbsc-ewh>) and continue disseminating the call for Mentors and Mentees of the EWH Mentorship Programme (IHO CL 46/2022).
- 21.3 MACHC members are invited to provide contributions of the IHO e-Learning Center at KHOA.

Maritime Safety Information Services

27. Work by the International Maritime Organization (IMO) on the modernization of the Communications and Global Maritime Distress and Safety System (GMDSS) continues with the ongoing review and updating of the SOLAS chapters III and IV and on the related and consequential amendments to existing instruments. The consequential changes as a result of the recognition of the Iridium SafetyCast service as a recognised mobile satellite service (RMSS) provider in the GMDSS continue to be implemented. The Iridium SafetyCast service became SOLAS carriage compliant from 1 January 2020. As a key outcome of MSC105 was that the use of all Recognised Mobile Satellite Services (RMSS) is now mandatory. The IMO made it clear that if any member state was experiencing issues with the implementation of SafetyCast, regardless of the nature of the issue, they should contact the IMO to discuss what support could be provided.

28. WWNWS provided feedback on IHO SPI 3.1.1 (target 90%) assigned to WWNWS. Overall, for 2023, WWNWS assessed Coastal States MSI capacity to be 87%. The SPI is measured yearly, based on the navigational warnings issued and on the MSI support provided by NAVAREAs. WWNWS is working in cooperation with CBSC on a C-55 GIS project, considering the States having MSI capacity and meeting the MSI SPI, and those not having such capacity and not meeting the MSI SPI. The presented demo on the C-55 GIS project will be evaluated to be incorporated into the INTToGIS III. On Iridium SafetyCast Implementation, WWNWS agreed that the use of all IMO RMSSs should be mandatory, showing those NAVAREAs already fully implementing the Iridium SafetyCast system, as well as those still in trial and those that have not yet implemented the system. Two courses on MSI were conducted in 2022.

29. S-124, Edition 1.0.0 is ready for submission for approval. NCSR10 approved the joint IMO/IHO/WMO Manual on Maritime Safety Information. IRCC recommended RHCs to encourage relevant Member States to report to the IMO Secretariat and the Chair of the EGC Coordinating Panel on the progress and status of implementation of newly recognized mobile satellite services by MSI providers. It has to be noted that MSI providers, should they implement Iridium SafetyCast services, are compelled to bear the burden of all additional costs, as a consequence of the approval by IMO Member States of the Iridium SafetyCast as an RMSS. Good progress has been made with implementation with a number of NAVAREAs due to become operational in 2022-2023, with more entering the formal testing phase. However, there is still a number of NAVAREAs that need to commit to implementation before the service can be declared fully operational. This causes concerns for Coastal States.

30. Recommendations:

The MACHC Chair is requested to encourage all MACHC members to:

- 30.1 *Establish and maintain effective communications with the relevant NAV and MET Area Coordinators to ensure the timely provision of MSI.*
- 30.2 *Use and follow the guidance provided in S-53 – Joint IMO/IHO/WMO Manual on Maritime Safety Information – to ensure the necessary facilities and capabilities are provided and maintained for the gathering and communication of MSI within their area of national responsibility.*
- 30.3 *Implement the Iridium SafetyCast services, as a consequence of the approval by IMO Member States of the Iridium SafetyCast as an RMSS.*

Crowd-Sourced Bathymetry, GEBCO and Seabed2030

31. Following the publication of B-12 Ed 3.0.0, CSBWG focused on a critical review of the group's operating mandate, as set out in the ToRs and RoPs. The new version of CSBWG ToR was approved by IRCC. CSB has reached a level of maturity and is picking up momentum rapidly, assisting in a change in the way many Member States view CSB. CSB is working on designing a work plan and determining their direction forward, reviewing the evidence, working on the strategy and agreeing with the outcome. An important point is to investigate and promote ways to increase data contributions and incentives to take active part in the CSB initiative, also investigating ways to foster and facilitate data providers, increase data contributors and identify incentives on how and why mariners should become involved.

32. The Circular Letters (IHO CL 21/2020 and IRCC CL 1/2020) to request MS to indicate their positions on the provision of CSB data are receiving new positive replies, in addition to the 34 already available at the link: https://iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12_2023_EN_Acceptance_of_CSB_Data_in_NWJ_v7.0.pdf thanks also to the continuous engagement of the CSB-GEBCO-Seabed 2030 Regional Coordinators with IHO Member States, to advocate for open data access and CSB activities. In fact, there continues to be concern over the apparent lack of dedicated resources available within national HOs to process data available via DCDB. The importance of liaison with other IHO bodies, as well as appropriate engagement with industry to progress the work items, continues to be a key enabler for the project.

33. A CSB Pointstore Dashboard is under development and the DCDB is formatted into a database schema and will then go through a data ingest pipeline to get archived and published. DCDB will continue to support the GEBCO Gazetteer and KHOA Beta-Gazetteer interoperability, developing a modern user interface. DCDB reported on SPIs 3.2.1 and 3.2.2 in a way that allows better understanding on the evolution on the amount of data and number of contributors to DCDB who are not Hydrographic Offices. For the next reports, DCDB would cooperate with RHCs to produce annual regional breakdowns of data holdings as part of SPI reporting.

34. The GEBCO Guiding Committee (GGC) has been working on the celebrations of GEBCO 120th years of ocean discovery, a new GEBCO strategy, a GEBCO Code of Conduct, a GEBCO Governance review, including the GEBCO organogram with all the relations codified and the next steps for the approval of the new GEBCO governance. The high activity and intense cooperation with Seabed2030 was highlighted. A new GEBCO SubCommittee on Education and Training was established. Celebrations of GEBCO 120th anniversary were held in Monaco during the 3rd Session of the IHO Assembly in May 2023, in Paris during the IOC General Assembly in June 2023, and at the *Maps the Gaps Symposium* held in Monaco in November 2023.

35. With IHO CL 05/2023 – and with an IOC CL within the IOC community as well – the IHO advised Member States that nominations are being sought for the 20th course of the IHO-IOC-Nippon Foundation/GEBCO Training Program leading to a Graduate Certificate in Ocean Bathymetry at the University of New Hampshire (UNH), USA. The 20th course began in late August 2023 and students will undertake an intensive 12-month period of lectures, practical laboratory and on-the-water projects, secondments to relevant laboratories and cruises on research or survey ships. The course represents a strong investment in future generations of ocean scientists and hydrographers, In order to liaise with this successful existing program and to identify and connect with other ocean mapping programs, GGC38 decided to establish a new Sub-Committee on Education and Training (SCET), now operational.

36. Nippon Foundation GEBCO-Seabed 2030 project was endorsed as an Action of UN Decade of Ocean Science for Sustainable Development. The complex network of this project was explained along with the data ingestion in the system and mapping coverage that now stands at 24.9%, as announced by H.S.H. Albert II - Prince sovereign of the Principality of Monaco at the opening ceremony of the 3rd Session of the IHO Assembly on 2nd May 2023. The project is focused on mapping the gaps with three different initiatives: the Ocean Frontier Mapping, Crowd Sourced Bathymetry and Technology Innovation. It is necessary to promote the need to map the entire seabed and to encourage organizations to make their data available.

37. Nippon Foundation GEBCO-Seabed 2030 project signed many Memorandum of Understanding in recognition of the organizations' work to advance the understanding of ocean bathymetry, and to complement the goals of the United Nations Decade of Ocean Science for Sustainable Development. Data contributions increased from the previous year and, in addition to the regional programmes in support of IHO's Crowdsourced Bathymetry (CSB) initiative, it is seeing increasing interest across a diverse community of owners and operators of super yachts and small vessels who wish to help gather new depth information and support the harvesting of this bathymetry. New Trusted Nodes were established with the invaluable assistance of DCDB and CSB Working Group.

38. New global survey calls for greater coordination of seabed mapping activities were launched in London, 15 October 2021 to give a major boost to efforts to map the entire seafloor by the end of the decade. The survey aimed to develop a more consolidated global view of seabed mapping needs in order to move towards an agreed list of strategically important priority areas for further action. With IHO CL 11/2023, the IHO encouraged Member States to participate at the online survey to find out more about the status and potential of mapping the ocean floor, prepared by NLA International working on behalf of Seabed 2030. The survey is intended to reflect the views across both hydrographic and oceanographic communities that discharge responsibilities for seabed mapping in EEZs and ocean basins beyond national jurisdiction. In addition, it seeks the views from the wider global community of national government agencies involved in seabed mapping data acquisition, production and use. Finally, the results of the survey could help guide efforts to review and adapt IHO Publication C-55 Status of Hydrographic Surveying and Nautical Charting Worldwide.

39. Recommendations:

MACHC members are invited to:

39.1 Consider the impacts of the increasing global societal and United Nations (UN) driven need to complete the picture of the seafloor as well as the potential benefits to individual coastal States.

39.2 Make data freely available for inclusion in the DCDB and the widest possible use, in accordance with IHO Resolution 1/2017.

39.3 Consider to respond to the IHO CCLL 05/2023 and 11/2023.

IHO and United Nations Decade of Oceans for Sustainable Development

40. The IHO Secretariat attended the 2nd UN Oceans Conference in Lisbon, 27th June – 1st July 2022 with the principle aim to ensure that seabed mapping and hydrography were appropriately represented and that the IHO's leadership in these domains was duly recognised. The IHO led one side event on Seabed Mapping and Marine Data for Multifunctional Spatial Planning and provided closing remarks for the SB2030 side event, ensuring that the role of hydrography was properly represented and that due credit was attributed to the activities in which we are engaged. It is clear that the essential role that bathymetry plays in underpinning ocean science and related activities is becoming a mainstream concept, and consequentially other stakeholders (often with a more visible presence, larger network but less expertise/authority) are developing their own activities, initiatives and solutions that have the potential to encroach on, or duplicate IHO activity.

41. GOAL 3 confirms the IHO's ambition to help facilitate a paradigm shift in the design and delivery of qualitative and quantitative ocean knowledge to inform solutions that will contribute to the 2030 Agenda for Sustainable Development, whilst the IHO's ambition to be an effective and recognized contributor to the major Ocean related challenges identified by the international community. The IHO Secretariat, for its part, is moving in line with the aforementioned GOAL 3, reinforcing and expanding cooperation with International Organizations and participation in those events and initiatives closely related to the knowledge and the sustainable use of the Ocean. In fact, in accordance with the *Decade Challenge nr.8 – Create a digital representation of the ocean*, IHO is promoting the essential role of bathymetry in underpinning ocean science and related activities.

42. Within the framework of the UN Ocean Decade, significant attention is being paid to the importance of bathymetry, in addition to that range of ocean parameters such as temperature and salinity. The Global Ocean Observing System (GOOS) steering committee has identified a number of

Essential Ocean Variables (EOVs), suggesting that depth could be added to such list, with the IHO and IOC as leads under the auspices of the General Bathymetric Charts of the Oceans (GEBCO). In addition to that, the IHO and the OECD (Organization for Economic Co-operation and Development), with input from a broad range of stakeholders, have been undertaking a joint project to explore and identify the linkages between seafloor mapping, the ocean economy and ocean health and an IHO-OECD Workshop held in November 2023 in Monaco. The joint project has also the aim to discuss the benefits of increased investment in ocean mapping and better ocean knowledge. The initiative will bring to a dedicated report from IHO and OECD work on seafloor mapping and the ocean economy, as well as a key step in the OECD's project to produce an updated Ocean Economy in 2045 report ahead of the 2025 UN Ocean Conference, in order to directly support the aims and objectives of the Ocean Decade, as well as examine what a sustainable framework for global seabed mapping in the future would require. That will be preceded by the IHO's participation in the UN Ocean Decade Conference in Barcelona in April 2024 with satellite events in cooperation with the OECD, IMO's World Maritime University, the Nippon Foundation GEBCO-Seabed2030 project and other partners.

43. Recommendation: *MACHC is invited to take note of the engagement of the IHO Secretariat in the UN initiative and the items for further consideration.*

IHO GIS and Databases

44. Work has *continued* on the IHO internal systems. Especially, two components are to be mentioned:

- IHO Country Information system, and
- IHO Online Form system.

The IHO Country Information system has been progressively upgraded to include administrative information and facilitate the maintenance of the IHO publications such as Yearbook (P-5) and Status of Hydrographic Surveying and Charting Worldwide (C-55) posted on the IHO website. The IHO Online Form system has been used since March 2019 and has been widely accepted by the Member States for the Circular Letter responses and the updating of P-5 and C-55 (CL20/2019 and CL03/2020 refers). Countries in the MACHCRegion are invited to review their entry in the publications on an annual basis and provide the IHO Secretariat with the appropriate updates through the IHO Online Form system. The status of the data in the IHO Country Information Database concerning the MACHCMember States and one Observer, including those provided for C-55 is as follows:

Country	P-5 –Yearbook Last update received	C-55 Last update received
Brazil	January 2022	May 2023
Colombia	July 2023	November 2022
Cuba	December 2022	December 2016
Dominican Republic	August 2020	January 2023
France	January 2021	November 2023
Guatemala	August 2023	December 2019
Guyana	June 2023	December 2022
Jamaica	November 2021	February 2023
Mexico	May 2023	November 2012
Netherlands	October 2021	October 2022
Suriname	January 2023	November 2022
Trinidad and Tobago	September 2019	December 2022
United Kingdom	September 2019	December 2022
United States	July 2023	December 2018
Venezuela	June 2022	November 2021
Antigua and Barbuda	October 2023	November 2023
Barbados	-	December 2022
Belize	November 2019	December 2022
Costa Rica	-	-
El Salvador	March 2020	December 2016
Grenada	April 2017	December 2022
Haiti	-	December 2016
Honduras	June 2017	November 2005
Nicaragua	-	-
Panama	April 2017	December 2022
Saint Kitts and Nevis	September 2017	December 2022
Saint Lucia	December 2020	December 2022
Saint Vincent and the Grenadines	-	December 2022

45. An Esri-based GIS solution has been implemented for the efficient visualization of geospatial data stored in the Country Information System. This Cloud-based service has enabled access to various layers and functions through the IHO website such as the IHO ENC Catalogue. Currently, six WebGIS applications have been available to the public in this new environment (ENC Coverage Catalogue, IHO Web Catalogue of INT Charts and ENC Schemes, IHO Member States Map, FIG-IHO-ICA IBSC Recognized Programmes and Schemes, GEOMAC project and the Map regarding National Marine Spatial Data Information (MSDI) Portals).

46. **Recommendation.** *Countries in the MACHC Region are invited to review their entry in the IHO Yearbook and C-55 and to provide the IHO Secretariat with the appropriate updates or to report no change (CL 20/2019 refers).*

IHO Outreach

47. In 2022, the IHO website had a total of 863,322 page views. There were a total of 706,436 page views during the period 1 January 2023 – 30 Sept 23. From 1 January 2023 to 30 September 2023, posts on the IHO LinkedIn account had 249,982 impressions. On LinkedIn, the IHR articles are very popular and tend to get the most views. Posts about the EWH project are also popular. The IHO has had more than 8.600 followers on LinkedIn in November 2023 (versus 2880 in November 2020).

48. There have been also several actions to raise awareness about the IHO's work and the importance of hydrography to a broader audience. The Secretariat has continued communicating on social media and participated in regional and global initiatives for the ocean.

World Hydrography Day

49. As announced with IHO CL 01/2023, the theme for WHD 2023 is as follows:

“Hydrography – underpinning the digital twin of the ocean”

The digital twin of the ocean aims to develop a consistent, high-resolution, multi-dimensional and near real-time virtual representation of the ocean that could make ocean knowledge open-access, available to citizens, scientists and policy-makers around the world, and will provide a platform for global cooperation. The theme for WHD is designed to highlight the relationship between hydrography and oceanography, and how hydrography can play a key role in developing the digital twin of the ocean. The theme offers the opportunity to emphasize the competencies of hydrographers in the gathering and management of marine data, in order to assist in eliminating the barrier posed by the use of differing formats in the ocean domain.

50. With IHO CL 35/2023, the following theme for WHD 2024 was proposed for the Members States' approval:

“Hydrographic Information -Enhancing Safety and Efficiency in Marine Activities”

This theme is proposed to highlight that - as per Decision 8 of the 3rd Session of the IHO Assembly in May 2023 - Goal Number 1 of the Strategic Plan and its targets shall have the highest priority in the implementation of the 2024–2026 Work Programme, which means priority in application of material and human resources, liaison with public sector and industry partners, promotion of concerted regional approaches including increased collaboration with the RENCs, and support of test beds delivering best practice examples for the production, maintenance and distribution of all prioritized S-100 derivatives. Member States are requested to note the endorsement of the IHO Council, consider the proposed theme for WHD 2024 and provide their comments, if any, to the Secretariat no later than 31 December 2023. The Secretariat would also welcome any comments and suggestions aimed at improving the impact and the organization of annual WHD celebrations.

International Hydrographic Review (IHR)

51. Twice a year, the IHR provides an opportunity for Member States to publicize technical and other achievements in their region. An editorial board comprising a representative from each region has been established. As it was announced through IHO CL 03/2022, since 5 January 2022 the IHR has a new editor Dr Patrick Westfeld from Germany. Recently Dr Westfeld has been confirmed for another two year term as IHR editor.

52. Papers for consideration for publication in the IHR should be forwarded directly to the editor (ihreview@iho.int, copy to ihr.editor@iho.int.com). The deadlines are:

- End of January for the May Edition
- End of July for the November Edition.

53. At the 3rd Session of the IHO Assembly, the Review celebrated its 100th Anniversary with an IHR editor's report on the history, the achievements and evolution of the Review. The IHR May 2023 nr.29 issue was the jubilee issue and it was delivered to the Assembly's delegates.

54. **Actions Requested of SEPRHC:**

- a) Note this report.
- b) Consider the recommendations proposed in this report, particularly the creation of the role of *regional S-100 coordinator* and the participation at the *Project Team on Fund Generation of IHO' Project Initiatives* under the IRCC (when the IHO CL is available).
- c) Review entries related to IHO C-55 and P-5 (Yearbook) at least annually.
- d) Provide comments to the IHO CL 35/2023 on the theme for WHD 2024.
- e) Consider submitting papers for publication in the International Hydrographic Review.
- f) Take any other actions as considered appropriate.