

**21st MEETING OF THE IHO CAPACITY BUILDING SUB-COMMITTEE
IHO-CBSC21
June 2023**

Paper for the Consideration by CBSC21

Meso American & Caribbean Sea HC Report

Submitted by:	MACHC CB Coordinator
Executive Summary:	This document provides a summary report of the CB activities at MACHC.
Related Documents:	MACHC CB Plan 2022-2024 MACHC CB Plan 2023-2025
Related Projects:	

1. Introduction / Background

A three-year plan for CB activity in the MACHC region was approved by the membership in December 2022. This plan covers the period 2023-2025 and is reviewed annually (during MACHC meetings) to ensure it meets regional requirements. The plan is based on assessing the phase of development of each of the coastal states within the MACHC region (as determined by the IHO's three phases of CB) and arranging training activity to build the necessary capability to meet SOLAS treaty obligations. There is a great deal of 'SOLAS awareness' required in this region. The plan looks to address emerging challenges in the region that will arise with changes in technology and standards.

2. Assessment of Capacity Building Phase Stage of Coastal States

	Country / Territory	NHC or NHCC	CB Phase 1	CB Phase 2	CB Phase 3	Last TV
1	Antigua & Barbuda	2	4	1	3	2006
2	Bahamas	-1	2	1	3	2006
3	Barbados	2	4	1	3	2006
4	Belize	1	2	2	3	2023
5	Brazil	-1	4	4	4	2008
6	Colombia	-1	4	4	4	N/R
7	Costa Rica	-1	2	1	3	2011
8	Cuba	1	4	4	4	N/R
9	Dominica	-1	2	1	3	2006
10	Dominican Republic	1	2	1	3	2018
11	El Salvador	1	1	3	3	2017
12	FR - Guadeloupe	2	4	4	4	N/R
13	FR - Martinique	2	4	4	4	N/R
14	FR – Saint Martin	2	4	4	4	N/R
15	FR Saint Barthélemy	2	4	4	4	N/R
16	FR – French Guyana	2	4	4	4	N/R
17	Grenada	0	3	1	3	2006
18	Guatemala	2	2	2	3	2019
19	Guyana	-1	4	2	3	2013

20	Haiti	-1	1	4	4	2017
21	Honduras	-1	1	2	3	2010
22	Jamaica	2	4	1	3	2006
23	Mexico	-1	4	4	4	N/R
24	Netherlands - Antilles & Aruba (Leeward)	2	4	4	4	N/R
25	Netherlands - Antilles (Windward)	2	4	4	4	N/R
26	Nicaragua	-1	2	2	3	2014
27	Panama	1	2	2	3	2020
28	St. Kitts & Nevis	1	4	1	3	2006
29	St. Lucia	-1	4	1	3	2006
30	St. Vincent & Grenadines	0	4	1	3	2006
31	Suriname	2	4	4	3	2008
32	Trinidad & Tobago	-1	2	1	3	2006
33	UK - Anguilla	1	2	3	3	2006
34	UK - Bermuda	-1	2	3	3	
35	UK - British Virgin	-1	2	3	3	2006
36	UK - Cayman	-1	2	3	3	2006
37	UK - Montserrat	2	2	3	3	2006
38	UK - Turks & Caicos	-1	2	3	3	2006
39	USA - Navassa	0	4	4	4	N/R
40	USA - Puerto Rico & US Virgin	2	4	4	4	N/R
41	United States of America	2	4	4	4	N/R
42	Venezuela	-1	4	4	4	N/R

KEY

1. The numerical grid below describes the status of the National Hydrographic Committee (NHC)/National Hydrographic Coordination Committee (NHCC):

Value	Assessment
-1	No information available
0	The country does not have a NHC/NHCC
1	The country is in the process of establishing a NHC/NHCC
2	The country has established a NHC/NHCC

2. The numerical grid below applies to the Phases:

Value	Assessment
-1	No information available
0	The country is unaware of its national obligations
1	The country is aware of its national obligations but does not have the means to do it
2	The country has some ability to fulfil national obligations
3	The country fulfils its national obligations through a third party
4	The country fulfils its national obligations in a sustainable manner

Note: [the assessment represented by 3 is an alternative to 4] as explained in the IHO's Capacity Building Strategy

3. Those coastal states with a mature hydrographic service and consequently don't require a technical visit are marked as N/R (not required)

3. Activities completed since CBSC20

- A **Seminar on Raising Awareness of Hydrography** hosted by The United States preceded MACHC23 in December 2022. The funding provided by the IHO Capacity Building fund enabled representatives from the following coastal states to attend: Antigua & Barbuda, Belize, Dominica, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, St Kitts and St Vincent & Grenadines.

The Seminar was supported by the IHO, IALA and IMO who, as part of the UN goal, 'delivered as one'. The seminar raised awareness of the roles and responsibilities of the coastal states and provided an opportunity for the participants to discuss lessons learned during the previous year. The focus of the seminar was the development of Marine Spatial Data Infrastructures (MSDI) and the opportunities such development can provide coastal states in developing their blue economy. The Seminar was supported by industry partners and MACHC Member States and included a demonstration of MSDI and how it can be used.

- The MACHC region were invited to attend the IHO funded activities from neighbouring regions
 - The **Ports and Shallow Water Survey Course**, hosted by Brazil under the coordination of the South-West Atlantic Hydrographic Commission (SWAtHC), was held in October 2022. From the MACHC region, Guatemala also attended this Course.
 - The Dominican Republic and Mexico attended the **Hydrographic Databases Workshop** hosted by Ecuador under the coordination of the South East Pacific Regional Hydrographic Commission (SEPRHC) November-December 2022.
 - A **MSI Course** was held in Colombia under the coordination of the South East Pacific Regional Hydrographic Commission (SEPRHC) in September 2022 with support from the IHO CB Programme. The Dominican Republic and Guatemala attended this Course from this Commission.

4. Activities planned for 2023

- Technical Visit to Costa Rica – Dates to be confirmed, discussion with TV Team underway to find availability
- Technical Visit to Belize – scheduled for Week beginning 5th June 2023.
- Technical Visit to Honduras - Dates to be confirmed, discussion with TV Team underway to find availability
- High Level Technical Visit to Dominican Republic - Dates to be confirmed, discussion with TV Team underway to find availability
- High Level Technical Visit to Jamaica - Dates to be confirmed, discussion with TV Team underway to find availability
- MSI Course

- Tides Workshop for Spanish Speakers - November 2023, hosted by Costa Rica. The workshop will be led by U.S. NOAA with additional financial assistance and delivery support from CARIBE EWS, COCATRAM and Spain. Invitations for participants will be extended to the neighbouring RHCs.

5. Challenges faced in the region

The challenges in the MACHC region are complex. The rise in numbers of all types of vessels (commercial and cruise), the increasing size of vessels transiting the new larger locks of the Panama Canal, the age/reliability of the survey data that was used to compile the existing navigational products (and in some areas the lack of data) and climate change all add to the risk of transiting this area.

Extreme weather events are increasing in number and intensity in the region. The Caribbean endures a hurricane season which extends from July to November. The 2022 hurricane season was one of the costliest Atlantic Hurricane seasons on record. Hurricane Ian in September inflicted an estimated \$113.1 billion in damages to western Cuba, Southern western and Central Florida, a hurricane later in the season impacted this same region.

The region is also experiencing changes to rainfall levels. Since 2016 the Panama Canal has been struggling with water supply shortages. The first quarter of 2023 has seen less than 50% of the normal rainfall near the canal and lower than usual water levels in Gatun Lake, the largest of the 2 lakes that feed the canal. In response in May the draft limit was reduced to 44 feet (from a typical 50 feet), it is estimated that this will lead to 40% less cargo being able to be carried by ships. Splitting of heavier cargo across more vessels will also have a significant economic impact.

Similarly low water levels of the Mississippi River in 2022 led to barges unable to float and special water release measures implemented along with dredging activities to keep the river navigable and following floods earlier in 2022 the end of 2022 saw low water levels of the Amazon impacting fishing and large ships prevented from docking at port.

Volcanic activity, though rare, can be devastating such as that experienced in Montserrat. There is a subsea volcanic area near Grenada that is often active which can change the hydrography dramatically and impacts shipping. In 2018, an exclusion zone was established around Kick 'em Jenny volcano located 8km off Grenada in the shipping route from St Vincent to Grenada for fear that increased gases could reduce the buoyancy of ships.

The high number of Small Island Developing States (SIDS) in the MACHC offers a unique challenge because these states generally have no hydrographic infrastructure and are usually reliant on a national Maritime Authority or some other organization for the provision of hydrographic services. Much work is still required in building and developing sustainable Hydrographic Governance in these states. This also applies to several Central American States.

6. Achievements and lessons learned

The 2022 Seminar on Raising Awareness of Hydrography prior to MACHC included a workshop on MSDI. The development of MSDI will provide great benefits to the region enabling collaboration and coordination of activities. The MACHC wishes to encourage developing nations to consider MSDI at the outset as they learn about their other hydrographic obligations, and not as an afterthought. Whilst the broad range of hydrographic capability within the region enables the sharing of best practice, it is vital that it is recognized that one size does not fit all and the way that developing hydrographic organisations approach the development of MSDI does not need to be the same as well-established organisations. Developing organisations may be less hindered with legacy systems and policy and so their development of MSDI may be less constrained. They are also encouraged to take advantage of existing regional MSDI infrastructure, such as the Caribbean Marine Atlas and not have to recreate it individually with scarce resources.

The MACHC region continues to look for opportunities to work with other partners to better utilize resources and develop collaborative networks such as the IMO, IALA, IOCARIBE, the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWWS), and the Central American Marine Transportation Commission (COCATRAM). These latter two organisations, along with the neighboring RHCs (SWAtHC and SEPRHC) are co-sponsoring the Tides and Water Levels for Spanish speaker training that will be delivered in 2023 to deliver the broadest benefit for all participants.

To support the development of MSI capability in the region a MACHC MSI WG has been established. Through this dedicated group it is hoped that there will be a reduced reliance on IHO funded activities as closer collaboration will lead to sharing of knowledge and lessons learned.

The region has benefitted from a number of wider IHO CB opportunities this year which are helping build wider capability in the region and the dedication and commitment by the participants and nominating organizations should be acknowledged:

- Candidates from Guyana and Jamaica were selected for the 2022 Category B Hydrographic Survey Programme, funded via the IHO-Republic of Korea Programme of Technical Cooperation, and hosted by the Korea Hydrographic and Oceanographic Agency (KHOA) have successfully completed the programme.
- A candidate from Guatemala was selected for the 2022-2023 session of the Category A Master of Science in Hydrographic Science at the University of Southern Mississippi (USM), USA.
- Under the Empowering Women in Hydrography (EWH) project:
 - a candidate from Suriname was successful in gaining a place in the first cycle of At-Sea-Experience internships offered by the USA on NOAA hydrographic vessels.
 - the USA was successfully selected for an internship with the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC).
 - Candidates from Brazil and Cuba were successfully selected to attend the 3rd Session of the Assembly.

Work by the PCAs in the region has continued this year focusing on the development of hydrographic governance and survey training.

7. Conclusions:

The MACHC continues to raise hydrographic awareness throughout the region enabled through the provision of funding by the IHO for the seminar preceding the annual MACHC meeting. The attendance by Associate Member and Observers at the regional meeting enables the importance of regional hydrography to be highlighted and the benefits of collaboration to be showcased. With no Seminar funded for the region in 2023 it is of concern that this collaboration and sharing of knowledge will be impacted stalling the progress that has been witnessed in the region.

Given that capacity building requirements far exceed the available IHO CB funds available, it is essential to identify further collaboration opportunities with donor organizations and other governmental, non-governmental and industry partners to leverage scarce resources to meet common CB goals. MACHC continue to seek opportunities.

The impact of COVID-19 on the region is still evident but the commencement of face-to-face activities signals a shift. By continuing to look for opportunities to work closely with other regional organizations it is hoped that regional education of the importance of hydrography, data collection and the provision of products and services will help in limiting the impact on the Blue Economy and the development of the region.

8. Actions required of CBSC:

The CBSC is invited to:

- a. note the report
- b. encourage all RHCs to collaborate on CB training of common interest to maximise the use of CB funds.
- c. invite the CBSC to explore opportunities with donor organizations and
- d. take any action considered appropriate.

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