CAPACITY BUILDING PLAN

Programme document for the period 2024-2026

1. INTRODUCTION

1.1. Rationale

It is estimated that over 30% of the world's crude oil passes through the Caribbean which is home to over 50% of the world's cruise shipping. In addition, the Caribbean endures a hurricane season from July to November; the storms can and do leave a trail of devastation on the islands and their coasts. For these reasons, it is crucial that SOLAS contracting Governments undertake hydrographic surveys as and when required, that they arrange for the compilation and publication of hydrographic data, the dissemination and keeping up to date of all nautical information necessary for safe navigation.

The IHO Capacity Building Strategy classifies the development of hydrographic services into three phases:

– those which are in Phase 1: Collection and circulation of nautical information, necessary to maintain existing charts and publications up to date;

– those which are in Phase 2: Creation of a surveying capability to conduct coastal and offshore projects; and

– those which are in Phase 3: Produce paper charts, ENC and publications independently.

An important and complementary element of hydrographic capacity building is the development of a mature infrastructure for Maritime Safety Information (MSI) and such an infrastructure sits firmly in Phase 1.

Coastal/maritime states have certain treaty obligations (SOLAS) placed on them and the IHO/MACHC effort aims at assisting states in meeting these obligations. To achieve this a national understanding and coordination effort is required noting that:

- resources (human, time, finance etc) are limited, consequently prioritization is a fundamental issue;
- planning must be realistic;
- longer term training such as CAT A or B are not covered because such training is out of the scope of the IHO CB budget.

Nowadays, the rapidly evolving technology has replaced old navigation paradigms and demands continuous investments in education and training so that the Hydrographic Services can continue to provide high quality products and services which satisfy new demands of the maritime community.

MACHC is aware of its Member States' efforts to provide quality service to the international maritime community in order to contribute to the safety and security of navigation and human life at sea as well as the preservation of the environment in its region and, as part of the IHO community, to contribute to the achievement of the objectives and directions of the Organization. This document provides the MACHC Capacity Building plan to support those efforts.

1.2. Aims and objectives

The overall aims of the Plan are:

a) to train staff, at various levels, to ensure a much-needed capability on MSI, hydrography and nautical cartography, particularly after natural disaster or other incidents

which could affect water depths in harbours and approaches; and

b) to comply with the IHO resolutions and guidelines regarding MSI, hydrographic and nautical cartographic activities.

The specific objectives of this Plan are:

a) to ensure a basic level of MSI is established in all coastal states to produce Local/Coastal/NAVAREA Warnings, communicate effectively with the charting authority and implement the MSI elements of GMDSS;

b) to instruct staff in the region on the methods of carrying out hydrographic surveys, to improve safety of navigation through enhanced navigational products.

c) to promote the establishment of Hydrographic Services (HS) and the evolution of CB Phases of the established ones.

1.3. Priorities

Despite the breadth of need existing in the Region, for the period of 2024 to 2026, priorities should be set in the sequence of the following list, the first of which are the highest:

0 - activities which may promote awareness of national MSI and hydrographic obligations;

1 - activities which may improve the capacity of existing HS in Phase 1, including MSI-activities;

2 - activities which may improve the capacity of existing HS in Phase 2; and

3 - activities which may improve the capability of existing HS in Phase 3.

Note the link between the training activities listed in paragraph **2. Activities** below, and phases 0 to 3 listed above

The current hydrographic capacity status of countries/territories of the region is in Annex **A**.

1.4. Methodology and Procedures

This Plan will be reviewed each year, and adjustments made as necessary.

Each year the Commission will decide responsibilities for the programmed events of the subsequent year.

The MACHC Capacity Building Coordinator will send to the Chair, no later than February 15th of each year details of all planned projects. The projects must be written in the standards established by the IHO CBSC (see Annex **B**).

Projects supported by IHO CB Fund must follow the IHO CBSC procedures published at the IHO website.

The Chair will check the proposed projects and endorse them. The CB Coordinator will send them to the IHO CBSC and Secretary using the Capacity Building Management System or appropriate mechanism by the agreed CBSC deadline.

2. Activities

Phase	Activity	Project Objective	Target Audience
	Technical and Advisory Visits		
0.1	High level visit to governmental authorities	To raise government awareness of their SOLAS treaty obligations	Related Ministries and Heads of National Agencies, particularly governmental decision makers
0.2	Technical assessment and advice visit	Provide advice to identify how coastal states meet their	Maritime Sector National

Phase	Activity	Project Objective	Target Audience
		hydrographic and MSI reponsibilities	Agencies. Stakeholders and decision makers
0.3	Technical Implementation Visit	To audit the state of recommendations made as a result of previous technical visits	Maritime Sector National Agencies. Stakeholders and decision makers
0.4	Seminar on Raising Awareness of Hydrography		Maritime Sector National Agencies. Stakeholders and decision makers
	Technical Workshops, Seminars, Short Courses		
1.1	MSI Course (3 days) Training on establishment of MSI structure and basic MSI procedures	To establish a core group of trained persons to deal with MSI	MSI Practioners
1.2	Phase 1 Skills (5 days) An introduction to the assessment and promulgation of navigationally significant data	To provide a core group with the skills and knowledge to assess and promulgate navigationally significant information to the wider maritime community (this course supports the MSI course)	MSI Practioners
1.3	MSI Workshop (3 days)	To reinforce the learning at 1.1 above	MSI Practioners
2.1	Basic Hydrographic Survey Course (10 days)	To provide awareness of national hydrography, hydrographic surveying and nautical cartography	Maritime Sector Decision Makers
2.2	Port and Shallow Water Survey Course (5 days)	A workshop to aid exchange of information and ideas about the challenges faced by port and shallow water surveyors in the MACHC region	Port Surveyors
2.3	MBES Processing (5 days)	To train a group of hydrographic surveyors the techniques required to post-process MBES data	Hydrographic Practioners
2.4	MSDI and Database Management (5 days)	To give participants an understanding of spatial data infrastructures (SDI) including the importance and role of data management and databases	Government Planners
2.5	Tides and Water Level Workshop (5 days)	To provide fundamental knowledge and understanding of tides and water level, and their applications for hydrographic surveying and mapping activities	Hydrographic Practioners
2.6	Seabed Classification Workshop (5 days)	To provide a group of professionals with the skill and knowledge to use acoustic techniques to map extensive seabed surfaces and to determine the products of seabed	Hydrographic Practioners

Phase	Activity	Project Objective	Target Audience
		mapping	
3.1	Basic ENC and ENC Production course (10 days)	To train a group of professionals with a practical introduction to S-57 data	Cartographic Practioners
3.2	ENC Production and QA (5 days)	To train a group of professionals to verify and validate S-57 data	Cartographic Practioners
4.1	Law of the Sea Workshop (5 days)	To teach participants the basic technical principles applicable to maritime boundary delimitation. The delegates should be from technical hydrographic or cartographic backgrounds	Maritime Sector Decision Makers
4.2	Tsunami inundation mapping workshop (5 days)	To improve the modelling and presentation of regional tsunami inundation maps	Maritime Sector and emergency planning
4.3	Foundation Module of the Marine Cartography & Data Assessment (MCDA) CAT B Course (3 weeks)	To provide participants with the knowledge of cartographic basics covering the underlying details of the nautical chart.	Cartographic Practioners
4.4	Compilation Module of the Marine Cartography & Data Assessment (MCDA) CAT B Course (5 weeks)	A highly practical module where the student will compile into a database all the relevant nautical chart content in compliance with IHO S-57 using CARIS S-57 Composer software.	Cartographic Practioners
4.5	Product Construction Module of the Marine Cartography & Data Assessment (MCDA) CAT B Course (2 weeks)	This module covers the production of an ENC base cell including ENC validation and exchange set creation using CARIS S-57 Composer together with the production of a Paper Chart using CARIS Paper Chart Composer.	Cartographic Practioners
4.6	Data Assessment Module of the Marine Cartography & Data Assessment (MCDA) CAT B Course (3 weeks)	This module focuses on decision making and processing of new information using software and traditional checking processes.	Cartographic Practioners
4.7	Maintenance Module of the Marine Cartography & Data Assessment (MCDA) CAT B Course (2 weeks)	Another highly practical module which features Notice to Mariner updating of digital and paper products together with New Edition maintenance of the ENC and Paper Chart.	Cartographic Practioners
	Long Courses and Programmes		
HA	Category “A” Hydrographic Programme	A recognized CAT A level Programme in accordance with IHO Publication S-5 – *Standards of Competence for Hydrographic Surveyors*	Hydrographic Managers
HB	Category “B” Hydrographic Programme	A recognized CAT B level Programme in accordance with IHO Publication S-5 – *Standards of Competence for Hydrographic Surveyors*	Hydrographic Practioners

Phase	Activity	Project Objective	Target Audience
CA	Category “A” Nautical Cartography Programme	A recognized CAT A level Programme in accordance with IHO Publication S-8 – *Standards of Competence for Nautical Cartographers*	Cartographic Managers
CB	Category “B” Nautical Cartography Programme	A recognized CAT B level Programme in accordance with IHO Publication S-8 – *Standards of Competence for Nautical Cartographers*	Cartographic Practioners
	On-the-job and onboard training		
OJ	On-the-job training		
OB	Onboard training		

3. Capacity Building Program

The program of capacity building activities for the period 2024-2026 is detailed in Annex **C**.

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MACHC Counties/Territories Capacity Building Phase Stage

Reference: http://www.iho-ohi.net/mtg_docs/CB/CBA_TechnicalVisits.htm

	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	2024
5	Brazil	2	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 – through bilateral agreements a third party may be used to provide a solution for chart production and distribution (for ENCS through RENCs).

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

PROJECT SUBMISSION MODEL

IDENTIFICATION

Project Number:

Project Name:	
Submitting RHC/Country:	
Date:	
Institution executing the project:	
Name of responsible:	
Address:	
Telephone:	
Fax:	
e-mail:	

GENERAL SPECIFICATIONS

(Please provide detailed information in Annex of no more than three pages)

Background information	
Justification of the project	

Countries involved	
Exposition of the problem	
General objective	
Specific objectives	
Outputs/Products	
Other deliverables	
Achievements and awaited benefits	

Schedule of activities	

RESOURCES

Contribution by countries involved	
Contribution	

by other parties	
Contribution expected from CBCFund	
Total Cost (euros)	
Breakdown of costs	

From CBC Fund (item and amount)	

PROJECT SUMMARY

Sponsor RHC	Year of Execution	Country/ Countries involved	Priority/ Status	Project Name	Project Objective	Benefits	Assistance required	Cost	Allocation and Priority (to be filled by CBC)	Contact Person

Name and Signature of the RHC Chairman …….

Capacity Building Program for the period 2024-2026

2024

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Assistance Visit	Costa Rica	NGA	2024	(from 2023 A-05)
Technical Assistance Visit	Honduras	NGA	2024	(from 2021 A-03, 2022 A-11, 2023 A-11)
Hydrographic Awareness Seminar to precede the main MACHC meeting	For identified coastal states	MACHC CB Coordinator	2024	2 December 2024 to preceded MACHC24
MSI (training on establishment of MSI structure ad basic MSI procedure	For identified coastal states	WWNWS	2024	Date to be confirmed
Non IHO Funded Regional Activities				
COCATRAM	For identified coastal states	COCATRAM	2023	Funding support provided for the Tides Workshop activity
IALA World-Wide Academy	For identified coastal states	IALA Gerardine Delanoye - Capacity Building & Resources Manager WWA	2023	**Online Webinars** available via IALA You Tube Channel Requests for technical support can be raised directly with IALA **Technical Missions** funded by the IALA Worldwide Academy. **National Seminars** addressing Technical Challenges.
NOAA Ship Experience 'Empowering Women'	For identified coastal States	NOAA	2023	Empowering Women in Hydrography Project

2025

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Assessment Visit	Bahamas	MACHC CB Coordinator	2025	IHO Funded. Requested by Coastal States directly with CB Coordinator or via inclusion in National Report
High Level Visit	Guatemala	MACHC CB Coordinator	2025	IHO Funded. Requested by Coastal States directly with CB Coordinator or via inclusion in National Report
Hydrographic Awareness Seminar to precede the main MACHC meeting	For identified coastal states	MACHC CB Coordinator	2025	To precede the MACHC plenary meeting. To assist in raising regional awareness and to address matters important to the region and hydrographic governance
ENC Quality and Conversion Course (S-57 – S-101)	For identified coastal states	MACHC CB Coordinator	2025	To support coastal states in readiness of the implementation of the S-10X standards. This Activity is submitted to the CBSC for consideration of IC-ENC support
Tides and Levels	For identified coastal	MACHC CB Coordinator	2025	Requested at

Workshop	states			MACHC23 meeting following the success of the Course for Spanish speakers funded and delivered in 2023 for the region
Non IHO Funded Regional Activities				
COCATRAM	For identified coastal states	COCATRAM		Funding support is available, and CB Coordinator will work COCATRAM to identify which submissions could be co funded.
IALA World-Wide Academy	For identified coastal states	IALA Gerardine Delanoye - Capacity Building & Resources Manager WWA		**Online Webinars** available via IALA You Tube Channel Requests for technical support can be raised directly with IALA **Technical Missions** funded by the IALA Worldwide Academy. **National Seminars** addressing Technical Challenges.
NOAA Ship Experience 'Empowering Women'	For identified coastal States	NOAA	2023	Empowering Women in Hydrography Project.

2026

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Implementation Visits	For identified coastal states	MACHC CB Coordinator	2026	IHO Funded. Requested by Coastal States directly with CB Coordinator or via inclusion in National Report
Hydrographic Awareness Seminar to precede the main MACHC meeting –	For identified coastal states	MACHC CB Coordinator	2026	To precede the MACHC plenary meeting. To assist in raising regional awareness and to address matters important to the region and hydrographic governance
Survey Planning Course	For identified coastal states	MACHC CB Coordinator	2026	Additional funding will be sought
ENC Production & Quality Assurance Course	For identified coastal states	MACHC CB Coordinator	2026	