



**INTERNATIONAL HYDROGRAPHIC ORGANIZATION  
NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION**



**CAPACITY BUILDING PLAN**  
Programme document for the period 2018-2020

## 1. INTRODUCTION

### 1.1. Rationale

The Indian Ocean provides major sea routes connecting the Middle East, Africa, and East Asia with Europe and the Americas. It carries a particularly heavy traffic of petroleum and petroleum products from the oilfields of the Persian Gulf and Indonesia. Every year some 100,000 cargo ships pass through the Indian Ocean, as well as 66% of the world's oil shipments. Its fish are of great and growing importance to the bordering countries for domestic consumption and export. Fishing fleets from Russia, Japan, South Korea, and Taiwan also exploit the Indian Ocean, mainly for shrimp and tuna. Large reserves of hydrocarbons are being tapped in the offshore areas of Saudi Arabia, Iran and India. An estimated 40% of the world's offshore oil production comes from the Indian Ocean. Beach sands rich in heavy minerals and offshore placer deposits are actively exploited by bordering countries, particularly India, Indonesia, Sri Lanka, and Thailand. 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.

Coastal/maritime states have certain treaty obligations (SOLAS) placed on them and the IHO/NIOHC 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.

NIOHC 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.

## 1.2. Aims and objectives

The aims of the Plan are:

- a) to train staff, at various levels, to ensure a much needed capability on 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 hydrographic and nautical cartographic activities.

The medium term objective 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;

The longer term objectives are:

- a) to instruct staff in the region on the methods of carrying out hydrographic surveys, to improve safety of navigation through enhanced navigational products;
- b) 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 2018 to 2020, 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 hydrographic obligations;
- 1 - activities which may improve the capacity of existing HS in Phase 1;
- 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 NIOHC Capacity Building Coordinator will send to the Chair, no later than January 31<sup>st</sup> 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, if requesting IHO CB Fund support, will send them to the IHO CBSC Chair and Secretary no later than MARCH 15<sup>th</sup>, otherwise, will take the appropriate action.

## 2. Activities

Phase	Activity	Project Objective	Target Audience
	<b>Technical and Advisory Visits</b>		
0.1	High-level visit to governmental authorities	To raise government awareness of their SOLAS treaty obligations	Related Ministries and Heads of

Phase	Activity	Project Objective	Target Audience
			National Agencies, particularly governmental decision makers
0.2	Technical assessment and advice visit	Provide advice to identify how coastal states meet their hydrographic and MSI responsibilities	Maritime Sector National 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
	<b><u>Technical Workshops, Seminars, Short Courses</u></b>		
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 Practitioners
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 Practitioners
1.3	MSI Workshop (3 days)	To reinforce the learning at 1.1 above	
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 NIOHC 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 Practitioners
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	Hydrographic Practitioners

Phase	Activity	Project Objective	Target Audience
		mapping activities	
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 mapping	Hydrographic Practitioners
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 Practitioners
3.2	ENC Production and QA (5 days)	To train a group of professionals to verify and validate S-57 data	Cartographic Practitioners
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 Practitioners
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 Practitioners
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 Practitioners
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 Practitioners
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 Practitioners
	<b><u>Long Courses and Programmes</u></b>		
HA	Category "A" Hydrographic Programme	A recognized CAT A level Programme in accordance with IHO Publication S-5 – <i>Standards of Competence for Hydrographic Surveyors</i>	Hydrographic Managers

<b>Phase</b>	<b>Activity</b>	<b>Project Objective</b>	<b>Target Audience</b>
HB	Category “B” Hydrographic Programme	A recognized CAT B level Programme in accordance with IHO Publication S-5 – <i>Standards of Competence for Hydrographic Surveyors</i>	Hydrographic Practitioners
CA	Category “A” Nautical Cartography Programme	A recognized CAT A level Programme in accordance with IHO Publication S-8 – <i>Standards of Competence for Nautical Cartographers</i>	Cartographic Managers
CB	Category “B” Nautical Cartography Programme	A recognized CAT A level Programme in accordance with IHO Publication S-8 – <i>Standards of Competence for Nautical Cartographers</i>	Cartographic Practitioners
	<b><u>On-the-job and onboard training</u></b>		
OJ	On-the-job training		
OB	Onboard training		

### 3. Capacity Building Program

The program of capacity building activities for the period 2018 – 2020 is detailed in Annex **C.**

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**NIOHC Counties/Territories Capacity Building Phase Stage**Reference: [http://www.iho-ohi.net/mtg\\_docs/CB/CBA\\_TechnicalVisits.htm](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	Bangladesh	-1	4	4	4	2012
2	British Indian Ocean Territories	-1	4	4	4	N/R
3	Djibouti	-1	-1	3	3	N/R
4	Egypt	-1	4	4	3/4	
5	Eritrea	-1	0	0	3	
6	India	-1	4	4	4	N/R
7	Israel	-1	4	4	4	
8	Jordan	-1	1	1	3	
9	Maldives	-1	-1	3	3	2008*
10	Mauritius	-1	3	3	3	2012
11	Myanmar	-1	4	4	3/4	2008*
12	Oman	2	4	4	3/4	2007
13	Pakistan	-1	4	4	4	N/R
14	Saudi Arabia	-1	4	4	3/4	2007
15	Seychelles	-1	4	3	3	2012
16	Somalia	-1	-1	0	3	
17	Sri Lanka	-1	4	4	3/4	2014
18	Sudan	-1	1	1	3	2007
19	Thailand	-1	4	4	4	2008*
20	Yemen	-1	-1	1	3	2007

\* IOC/IHO (IO COAST-MAP Joint project) consolidated report

**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 the 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)



PROJECT SUBMISSION MODEL
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**IDENTIFICATION**

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

**GENERAL SPECIFICATIONS**

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

<b>Background information</b>	
<i>Justification of the project</i>	

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

<b>Schedule of activities</b>	
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**RESOURCES**

<b>Contribution by countries involved</b>	
<b>Contribution</b>	



<b>by other parties</b>	
<b>Contribution expected from CBCFund</b>	
<b>Total Cost (euros)</b>	
<b>Breakdown of costs</b>	
<b>From CBC Fund (item and amount)</b>	

**PROJECT SUMMARY**

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

**Name and Signature of the RHC Chairman .....**

Capacity Building Program for the period 2018 – 2020

2018

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Implementation Visits	For identified coastal states	NIOHC CB Coordinator		
Phase 1 Skills (5 days)	For identified coastal states	NIOHC CB Coordinator		

2019

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Implementation Visits	For identified coastal states	NIOHC CB Coordinator		
MSDI and Database Management (5 days)	For identified coastal states	NIOHC CB Coordinator		
MBES Processing (5 days)	For identified coastal states	NIOHC CB Coordinator		

2020

Activity	Beneficiaries Countries / Territories	Responsible	Period	Obs.
Technical Implementation Visits	For identified coastal states	NIOHC CB Coordinator		
MSI Course (3 days)	For identified coastal	NIOHC CB		

	states	Coordinator		
ENC Production and QA (5 days)	For identified coastal states	NIOHC CB Coordinator		