



CAPACITY BUILDING PLAN

Programme document for the period 2013-2017

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.

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.

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 2013 to 2017, 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 MACHC Capacity Building Coordinator will send to the Chair, no later than January 31st 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 15th, otherwise, will take the appropriate action.

2. Activities

| Phase | Activity | Project Objective | Target Audience |
|-------|---|--|--|
| 0.1 | <u>Technical visits Type 1</u> High level technical 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 | <u>Technical visits Type 2</u> 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 |
| 1.1 | <u>MSI Course (3 days)</u> Training on establishment of MSI structure and basic MSI procedures | To establish a core group of trained persons to deal with MSI | MSI Practitioners |

| Phase | Activity | Project Objective | Target Audience |
|--------------|---|--|---------------------------------|
| 1.2 | <u>Phase 1 Skills (5 days)</u> 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 |
| 2.1 | <u>Basic Hydrographic Survey Course (10 days)</u> | To provide awareness of national hydrography, hydrographic surveying and nautical cartography | Maritime Sector Decision Makers |
| 2.2 | <u>Port and Shallow Water Survey Course (5 days)</u> | 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 | <u>MBES Processing (5 days)</u> | To train a group of hydrographic surveyors the techniques required to post-process MBES data | Hydrographic Practitioners |
| 2.4 | <u>MSDI and Database Management (5 days)</u> | To give participants an understanding of spatial data infrastructures (SDI) including the importance and role of data management and databases | Government Planners |
| 2.5 | <u>Tides and Water Level Workshop (5 days)</u> | To provide fundamental knowledge and understanding of tides and water level, and their applications for hydrographic surveying and mapping activities | Hydrographic Practitioners |
| 2.6 | <u>Seabed Classification Workshop (5 days)</u> | 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 | <u>Basic ENC and ENC Production course (10 days)</u> | To train a group of professionals with a practical introduction to S-57 data | Cartographic Practitioners |
| 3.2 | <u>ENC Production and QA (5 days)</u> | To train a group of professionals to verify and validate S-57 data | Cartographic Practitioners |
| 3.3 | <u>Module 1 – Marine Cartography of the CAT B Cartographic Course (5 weeks)</u> | To provide participants delegates with a practical understanding of nautical cartography and the necessary skills to carry out routine nautical cartographic skills | Cartographic Practitioners |
| 3.4 | <u>Module 2 – Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)</u> | To provide participants with a practical understanding of hydrographic data processing the skills to carry out accurate assessment and an appreciation of the issues surrounding chart maintenance | Cartographic Practitioners |
| 3.5 | <u>Module 3 – Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)</u> | To provide a group of professionals with the skill and knowledge to produce ENCs | Cartographic Practitioners |
| 3.6 | <u>Law of the Sea Workshop (5 days)</u> | To teach participants the basic technical principles applicable to | Maritime Sector Decision Makers |

| Phase | Activity | Project Objective | Target Audience |
|-------|---|---|--|
| | | maritime boundary delimitation. The delegates should be from technical hydrographic or cartographic backgrounds | |
| 3.7 | <u>Tsunami inundation mapping workshop (5 days)</u> | To improve the modelling and presentation of regional tsunami inundation maps | Maritime Sector and emergency planning |

3. Capacity Building Program

The program of capacity building activities for the period 2013 – 2017 is detailed in Annex C.

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MACHC Counties/Territories Capacity Building Phase StageReference: http://www.iho-ohi.net/mtg_docs/CB/CBA_TechnicalVisits.htm

| | Country / Territory | CB Phase 0 | CB Phase 1 | CB Phase 2 | CB Phase 3 | Last TV |
|----|--|------------|------------|------------|------------|---------|
| 1 | Antigua & Barbuda | | Self | | UKHO | 2006 |
| 2 | Bahamas | | ? | | UKHO | 2006 |
| 3 | Barbados | | Self | | UKHO | 2006 |
| 4 | Belize | | ? | | UKHO | 2011 |
| 5 | Brazil | | Self | Self | Self | 2008 |
| 6 | Colombia | | Self | Self | Self | N/R |
| 7 | Costa Rica | | ? | | US/UKHO | 2011 |
| 8 | Cuba | | Self | Self | Self | N/R |
| 9 | Dominica | ? | ? | | UKHO | 2006 |
| 10 | Dominican Republic | | ? | | UKHO | 2012 |
| 11 | El Salvador | | Self | US | US/UKHO | 2010 |
| 12 | Grenada | | ? | | US/UKHO | 2006 |
| 13 | Guatemala | | Self | Self | UKHO | 2010 |
| 14 | Guyana | | Self | Self | UKHO | 2012 |
| 15 | Haiti | | ? | US | US/UKHO | 2009 |
| 16 | Honduras | | ? | Self | UKHO | 2010 |
| 17 | Jamaica | | ? | | UKHO | 2006 |
| 18 | Mexico | | Self | Self | Self | N/R |
| 19 | Netherlands - Antilles & Aruba (Leeward) | | NLHO | NLHO | NLHO | N/R |
| 20 | Netherlands - Antilles (Windward) | | NLHO | NLHO | NLHO | N/R |
| 21 | Nicaragua | ? | Self | Self | Self | 2005 |
| 22 | Panama | ? | | US | UKHO | 2005 |
| 23 | St. Kitts & Nevis | | Self | | UKHO | 2006 |
| 24 | St. Lucia | | Self | | UKHO | 2006 |
| 25 | St. Vincent & Grenadines | ? | | | UKHO | 2006 |
| 26 | Suriname | | Self | Self | NLHO/UKHO | 2008 |
| 27 | Trinidad & Tobago | | | | UKHO | 2006 |
| 28 | UK - Anguilla | | Self | UK | UKHO | 2006 |
| 29 | UK – Bermuda | ? | Self | UK | UKHO | |
| 30 | UK - British Virgin | | Self | UK | UKHO | 2006 |
| 31 | UK - Cayman | | Self | UK | UKHO | 2006 |
| 32 | UK - Montserrat | | Self | UK | UKHO | 2006 |
| 33 | UK - Turks & Caicos | | Self | UK | UKHO | 2006 |
| 34 | USA - Navassa | | ? | US | US | N/R |
| 35 | USA - Puerto Rico & US Virgin | | ? | US | US | N/R |
| 36 | United States of America | | Self | Self | Self | N/R |

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|----|-----------|--|------|------|------|-----|
| 37 | Venezuela | | Self | Self | Self | N/R |
|----|-----------|--|------|------|------|-----|

KEY TO REQUIRED TRAINING ACTIVITY

| | |
|--|--|
| | Technical visit |
| | MSI Training and development |
| | Hydrographic survey training and development |



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| PROJECT SUBMISSION MODEL |
|--------------------------|

IDENTIFICATION

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|------------------|
| Project Number : |
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| | |
|---|--|
| 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)

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|-------------------------------------|--|
| Background information | |
| <i>Justification of the project</i> | |

| | |
|--|--|
| <i>Countries involved</i> | |
| 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 2013 – 2017

2013

| Activity | Beneficiaries Countries / Territories | Responsible | Period | Obs. |
|---|---|--|--------|--|
| Technical and Advisory Visits | Dominica, St Vincent & Grenadines, St Kitts & Nevis, Panama | IHO and MACHC | | The CBSC did not accept this submission at its meeting in Singapore June 2012 |
| MSI Course (3 days) | For identified coastal states | MACHC CB Coordinator | | |
| Basic Hydrographic Survey Course (10 days) | For identified coastal states | MACHC CB Coordinator | | The CBSC did not accept this submission at its meeting in Singapore June 2012 |
| Law of the Sea Workshop (5 days) | For identified coastal states | MACHC CB Coordinator | | The CBSC did not accept this submission at its meeting in Singapore June 2012 |
| MSDI and Database Management (5 days) | For identified coastal states | MACHC CB Coordinator | | The CBSC did not accept this submission at its meeting in Singapore June 2012 |
| IALA Academy Level 1+ Training Course (2 days) | For identified coastal states | IALA CB Coordinator/MACHC CB Coordinator | | An extraordinary submission will have to be developed to seek funding to complement that offered by IALA |
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At the 13th MACHC meeting in Guatemala there was overwhelming support for a MSDI and Database Management course for the MACHC region

2014

| Activity | Beneficiaries Countries / Territories | Responsible | Period | Obs. |
|----------|---|-------------|--------|------|
|----------|---|-------------|--------|------|

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|---|--|----------------------|--|---|
| Technical and Advisory Visits | Nicaragua | IHO and MACHC | | Approved by the CBSC11 meeting |
| Basic ENC and ENC Production Course (10 days) | For identified coastal states | MACHC CB Coordinator | | This activity was completed in May 2012 so the 13 th MACHC participants agreed to replace it with an MSDI course |
| MSDI and Database Management (5 days) | For identified coastal states | MACHC CB Coordinator | | Part funded by the CBSC11 meeting |
| Sub-regional course on Hydrography (for Spanish Speakers) | Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica and Dominican Republic | Guatemala | | Approved by the CBSC11 meeting |
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At the 14th MACHC meeting in Sint Maarten's there was strong support for a Phase 1 Skills Course for Spanish Speakers. It was also decided to replace the MSDI and Database Management workshop (funded for 2014) with a 2-day Raising Awareness of hydrography seminar for Associate and non MACHC members (this seminar will precede the 15th MACHC meeting in Manzanillo).

- Mexico also offered the possibility of training in CARIS and the use of echo-sounders in a Latin American environment to Spanish speakers.
- 'Sea Riding' opportunities on survey vessels operating in the MACHC region were also raised as a possible training activity

2015

| Activity | Beneficiaries Countries / Territories | Responsible | Period | Obs. |
|--|---|----------------------|--------|---|
| Technical and Advisory Visits | Dominica, St Vincent & Grenadines, and St Kitts and Nevis | IHO and MACHC | | Previously identified for technical visits in 2013 but all three states will be included in the OECS Hydro Project Scoping Study visits so suggest this activity is not submitted |
| Law of the Sea Workshop (5 days) | For identified coastal states | MACHC CB Coordinator | | Suriname offered to host |
| Basic Hydrographic Survey Course (10 days) | For identified coastal states | MACHC CB Coordinator | | The IMO might fund a similar |

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|---|-------------------------------------|---|--|--|
| days) | | | | activity in region so suggest this course is not submitted |
| Phase 1 Skills Course (5 days) for Spanish Speakers | For Spanish Speaking coastal states | MACHC CB Coordinator in conjunction with Mexico | | Mexico offered to both translate and deliver this course |
| 2 day Hydrographic Awareness Seminar | For identified coastal states | MACHC CB Coordinator | | IMO & IALA offered to join this activity on the understanding that the focus would be expanded to include their contribution to the Safety of Navigation. Hence this will be a joint 'Safety of Navigation' workshop |
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At the 15th MACHC meeting in Manzanillo there was strong support for a Spanish MSDI & Data Management workshop (Mexico offered to host and provide a Spanish speaking SME). The US proposed an SDB Workshop based on the GEBCO cookbook and SVG requested a 5 day MSI and Hydro Governance workshop. A 2-day Safety of Navigation Seminar (or similar) for Associate and non MACHC members (possibly in partnership with IMO and IALA) will precede the 16th MACHC meeting in St John's, Antigua.

- As before 'Sea Riding' opportunities on survey vessels operating in the MACHC region were also raised as a possible training activity

2016

| Activity | Beneficiaries Countries / Territories | Responsible | Period | Obs. |
|---|---------------------------------------|----------------------|--------|---|
| Basic ENC and ENC Production Course (10 days) | For identified coastal states | MACHC CB Coordinator | | This activity received no support from the membership |
| MSDI and Database Management (5 days) | For identified coastal states | MACHC CB Coordinator | | Proposed by Mexico |
| SDB Workshop based on the GEBCO cookbook | For identified coastal states | MACHC CB Coordinator | | Proposed by US |
| MSI and Hydro | For identified coastal | MACHC CB | | Proposed by US |

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|--------------------------------|-------------------------------|----------------------|--|---|
| Governance Workshop | states | Coordinator | | NGA and extended by SVG |
| Hydrographic Awareness Seminar | For identified coastal states | MACHC CB Coordinator | | This 2 day seminar will be a permanent fixture of the MACHC |
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At the 16th MACHC meeting in Antigua the CB Coordinator suggested the following activities:-

- Repeat technical visits
- MSI Course
- Basic Hydro Survey Course
- MSDI & Database Management

The membership endorsed all but the MSDI & Database Management course. The prospect of another Hydro Awareness Seminar to precede the 18th MACHC meeting was not discussed but after discussions with the IHB and MACHC Chair a submission for this activity will be developed.

2017

| Activity | Beneficiaries Countries / Territories | Responsible | Period | Obs. |
|--|--|----------------------|--------|--|
| Technical and Advisory Visits | Repeat visits to selected coastal states | IHO and MACHC | | Supported |
| MSI Course (3 days) | For identified coastal states | MACHC CB Coordinator | | Supported |
| Basic Hydrographic Survey Course (10 days) | For identified coastal states | MACHC CB Coordinator | | Supported |
| MSDI and Database Management (5 days) | For identified coastal states | MACHC CB Coordinator | | No support for this activity. Replace with another Hydro Awareness Seminar |
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Annex D to CB Plan

Table of Bilateral Arrangements between MACHC Countries

| Country | Bilateral Arrangements with the following countries |
|--------------------------|--|
| Antigua & Barbuda | United Kingdom |
| Bahamas | |
| Barbados | United Kingdom |
| Belize | United Kingdom |
| Brazil | United Kingdom, France (Uruguay, Guyana, Suriname and Haiti in progress) |
| Colombia | United Kingdom |
| Costa Rica | |
| Cuba | United Kingdom |
| Dominica | |
| Dominican Republic | |
| El Salvador | United Kingdom, United States of America |
| Grenada | |
| France | United Kingdom, Brazil |
| Guatemala | |
| Guyana | United Kingdom |
| Haiti | |
| Honduras | United Kingdom |
| Jamaica | United Kingdom |
| Mexico | United Kingdom |
| Netherlands | United Kingdom, France |
| Nicaragua | |
| Panama | |
| St. Kitts & Nevis | |
| St. Lucia | |
| St. Vincent & Grenadines | |
| Suriname | United Kingdom, France, Netherlands, Brazil (in progress) |
| Trinidad & Tobago | |
| United Kingdom | Antigua & Barbuda, Barbados, Belize, Brazil, Colombia, Cuba, El |

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|--------------------------|---|
| | Salvador, France, Guyana, Honduras, Jamaica, Mexico, Netherlands, United States of America, Venezuela |
| United States of America | United Kingdom, France |
| Venezuela | United Kingdom |