

IHO CAPACITY BUILDING STRATEGY

References:

- IHOCBC Terms of Reference
- M-2 “National Maritime Policies and Hydrographic Services”
- S-55 “ Status of Hydrographic Surveying and Nautical Charting Worldwide”
- Safety of Life at Sea Convention (SOLAS), Chapter V
- United Nation Convention on the Law of the Sea (UNCLOS)
- UN General Assembly Resolution A/RES/58/240 dated 23 December 2003

I. INTRODUCTION

1. The IHO and Capacity Building.

Capacity building is a vital component of the efforts of intergovernmental technical organisations to support the development goals of the United Nations (UN). The IHO is committed to matching its efforts to those of the International Maritime Organisation (IMO), the International Oceanographic Commission (IOC), the International Association of Lighthouse Authorities (IALA), the International Federation of Surveyors (FIG) and other organizations working in allied fields.

In the IHO, capacity building is defined as the process by which the organisation assesses the status of current arrangements and assists States to achieve sustainable development and improvement in their ability to meet hydrographic, cartographic and maritime safety obligations with particular reference to recommendations in UNCLOS, SOLAS, and other international instruments.

The IHO Capacity Building Committee was established in 2003 to co-ordinate this effort, and the members began the development of this strategy paper drawing on the experience of the former FIG/IHO Technical Assistance and Co-ordination Committee (TACC) and advice from Member States and the industrial and academic sectors.

2. Vision Statement.

The **vision** behind this policy paper is to provide strategic guidance for IHO capacity building to ensure the optimum contribution to safety of life at sea, to the protection of the environment, and to national economic development.

II. PRINCIPLES

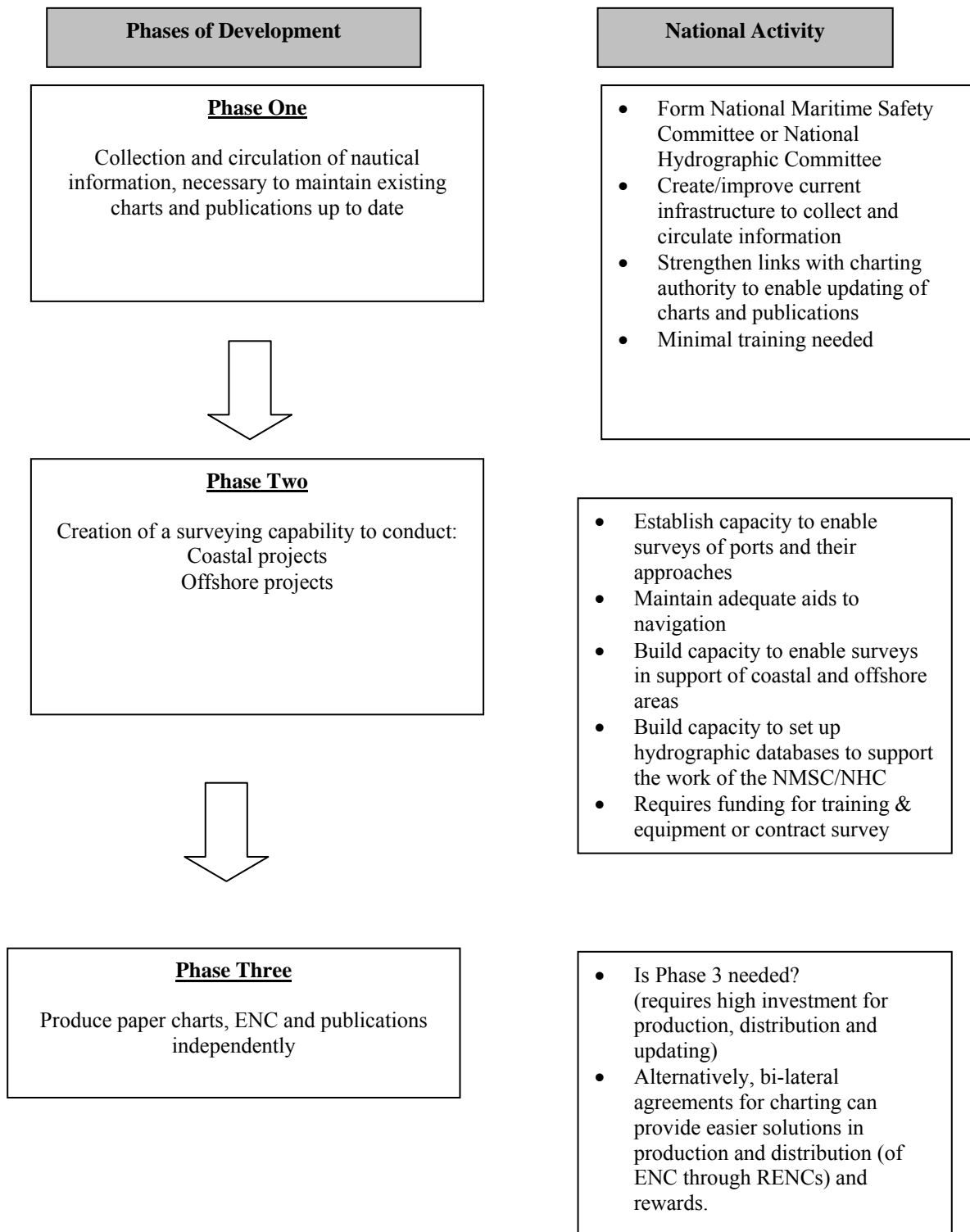
3. Principles.

The strategy will be consistent with the following principles:

- 3.1 Individual national needs for infrastructure, together with a nation’s capacity for infrastructure development, should be assessed firmly against the 3 phases of development as defined in M-2 and shown in Figure 1.
- 3.2 Skill and technology transfers must leave solutions in place, which are appropriate and **sustainable**.
- 3.3 Wherever possible, capacity building projects should be coordinated regionally and be supported through regional co-operation.
- 3.4 The national administration of a State with developing hydrographic services must embrace and support the concept of capacity building as being in its national interest.
- 3.5 The focus should be on achieving enduring **output** which will benefit safe navigation, safety of life at sea, protection of the marine environment and economic development, rather than on creating enabling infrastructure *per se*.

Figure 1

PHASES OF DEVELOPMENT OF HYDROGRAPHIC SURVEYING AND NAUTICAL CHARTING CAPABILITY



4. Objectives.

The willingness of the IHO to assist capacity building has been expressed in terms of short and long term objectives, providing a clear signal of the desired effect which the Organization is seeking. These objectives also constitute guidance for the work of the CBC in implementing this strategy.

4.1 Long Term Objective.

- To enable all states which have navigable waters to achieve phase 1 of development (i.e. timely collection and promulgation of hydrographic information for their national waters), and to develop a national plan to put in place appropriate elements of phases 2 and 3 or alternative co-operative regional or bilateral arrangements.

4.2 Short Term Objectives.

- To implement a programme of events to raise awareness of the importance of hydrography at all relevant levels.
- To establish a “live” electronic version of S-55 presenting an accurate picture of the output of hydrographic services world-wide.
- To enable the IHO to present clear priorities for capacity building action to the UN and subordinate technical organisations and funding agencies, and to national governments.
- To enable Regional Hydrographic Commissions (RHCs) to establish a data-base and prioritisation process for regional co-operative efforts.
- To implement appropriate management of an IHO Capacity Building Fund. (Complete 2006)
- To produce an auditable IHO Capacity Building Management Plan. (Complete 2006)

III. PROCESS

5. The 4 steps in the process.

The capacity building process is built around **4 steps: awareness, assessment, analysis and action.**

The IHOBCB recognises that the first step must be the raising of **awareness** of the significance and impact of hydrography on maritime safety, at the highest political levels in each country, and in the UN and subordinate technical organisations, regional maritime associations and funding agencies. Without this, adequate resources will not be secured and sustained for the implementation of the strategy. **Assessment** is underway on a permanent basis through the revision and update of S-55 and through technical visits. The subsequent steps of **analysis**, including prioritisation and identification of actions, and then the management and implementation of appropriate **actions**, require more detailed development within this policy paper. The degree of engagement required from each contributor to the process is suggested in the following table.

	IHO	IHOBCB	RHC	Country
Awareness	XXX	XXXX	XX	X
Assessment	X	XXX	XXXX	XX
Analysis	XXXX	XXX	XX	X
Action	X	XX	XXX	XXXX

The process will require development of the following elements:

- 1.1 Intensification of efforts to raise awareness of hydrography and to provide reference documents on the minimum requirements for national hydrographic services in accordance with SOLAS Chapter V Regulation 9.
- 1.2 Implementation and management of a CB fund or alternative mechanism (Fund established 2006).
- 1.3 Completion of the revision of the S-55 data-base to identify key deficiencies.
- 1.4 Development of assessment criteria to determine appropriate and sustainable national capacity.
- 1.5 Implementation of effective RHC processes for analysis and prioritisation of capacity building needs within the region.
- 1.6 Definition of an Action Plan to address selected goals within specific timescales, and to identify and manage funding.

The successive steps in the process are outlined in the paragraphs which follow. Detailed procedures are covered in Annex A entitled “IHOBCB Procedures Paper”.

5.1. Raising Awareness.

The IHB should continue the campaign for the establishment of the hydrographic services required to meet obligations under UNCLOS and SOLAS. The high profile which the IHB has sustained in the UNICPOLOS process, and within the IMO, should assist the IHOCBC to implement specific actions to target subordinate international and regional agencies. Very significant progress has been made in IMO Nav and MSC, and the imminent inclusion of the S-55 data-base in the Voluntary Country Audit Scheme will provide effective leverage to commit governments to resource the arrangements required under SOLAS V Regulations 9 and 14.

The IHOCBC should continue to explore the best means of raising awareness of the importance of hydrography in the funding agencies. The urgency of this task is underlined by increasing evidence of international and regional investment in hydrographic equipment for either marine scientific research (MSR) or protection of the marine environment, without adequate awareness of measurement criteria for data to support safe navigation.

M-2 is available, free of charge, together with general IHO Information Brochure and IHO PowerPoint presentation, on the IHO web-site (www.iho.int). It is an important tool for meetings at ministry level during technical advisory visits, and it will be continuously updated.

5.2. Assessment and Analysis of Needs

5.2.1 S-55

The S-55 data-base on the IHO web-site contains tables of MSI, survey and charting information for each coastal state. The standard formats for the agendas of the IHO RHCs, and for the National Reports presented to them, provide for the regular review of this information and for the discussion of capacity building initiatives to improve the situation in each country. The main deficiencies in complying with SOLAS V Regulation 9 in many coastal states are as follows:

- No effective organisation for the promulgation of information of importance to safe navigation and the protection of the maritime environment, either as navigational warnings or as inputs to NAVAREA co-ordinators and those hydrographic offices with responsibility for charting.
- Outstanding actions to implement the GMDSS.
- No capacity to plan and implement a prioritised survey programme, including a re-survey component.
- Failure to apply IHO S-44 criteria in Marine Scientific Research and offshore industrial surveys leading to lost opportunity data for SOLAS charting purposes.
- Lack of chart information on datum transfer parameters for GPS navigation.
- Lack of INT paper charts and ENC to support international navigation, especially in dangerous and VTS areas.

5.2.2 Technical Visits

Technical visits provide a powerful means of working with local administrators and experts to determine the arrangements for delivering SOLAS V obligations which are appropriate and sustainable for their country. Detailed guidance for such discussion and assessment is at Annex B to this strategy paper.

5.3 Mechanisms for Action

The following mechanisms are available for capacity building action:

- 5.3.1 Contact with decision-makers and advice to national experts:
 - IHO input to projects championed by IMO and other organisations.
 - IHB advisory visits;
 - RHC Visit Teams;
 - Technical Workshops.

5.3.2 IHO and RHC assistance in co-ordination of regional survey, charting and MSI projects, including advice on liaison with funding agencies and with industry.

5.3.3 Bilateral assistance by other IHO MS, by MOU, or on contract or aid-funded basis:
- provision of SOLAS-compliant hydrographic services by other MS through legal administrative arrangement
- loan of skilled staff;
- training, including options in region;
- output-based project assistance, with out-sourcing fully evaluated and exploited;
- appropriate and sustainable technology transfer.

5.4 Management of Capacity Building Action

The IHOCBC has established an IHO Capacity Building (CB) Fund. All transactions are transparent. Any donor may ear-mark pledged funding for a particular purpose or project if desired.

The disbursement of the IHO CB Fund is controlled by using a costed Management Plan to derive annual Work Programmes. It enables the IHOCBC to assess and prioritise proposals submitted through the RHCs, and to approve appropriate responses for which costs and benefits have been balanced. Further detail is in Annex A.

IV. PERIOD IN FORCE

6. This IHO Capacity Building Strategy Paper was approved by the members of the CBC on 30 November 2006 and updated in July 2007, and remains in force until withdrawn by that committee. It will be reviewed at each annual meeting of the CBC. The date of most recent approval will be shown at the head of the document.



Attachments:

Annex A: IHOCBC Procedures Paper

Appendix 1: Example of CBC Management Matrix

Appendix 2: Guidance for RHCs in drafting input to the IHOCBC Management Plan

Annex B: Guidelines for Assessment Criteria

Annex “A”

IHOCBC PROCEDURES PAPER

Reference: IHOCBC Strategy Paper.

I. INTRODUCTION

The IHOCBC Strategy Paper develops the organization’s policy for assisting the development of national hydrographic arrangements, and outlines the process by which this policy will be implemented. The aim of this paper is to provide the procedural guidance to enable the Regional Hydrographic Commissions (RHCs) and the co-ordinating organ, the Capacity Building Committee (CBC), to advise Member States on the optimisation of the use of available funding within the 3-year Work Programme.

II. PROCEDURES

1. TIMETABLE

In order to inform the IHO budget process, the CBC will meet in late May or early June each year. Therefore, wherever possible, RHC Chairmen should aim to submit their inputs to the Chairman CBC by 1 April so that they can be circulated to the committee members to enable them to prepare for the meeting.

2. IDENTIFICATION AND MANAGEMENT OF FUNDING

2.1. The statement of accounts for the IHB CB Fund will be the first key tool for the IHOCBC. It should provide the committee members with a clear indication of the unexpended balance which will be the starting figure for computation within the Management Plan. It will be tabled during the IHB Report at an early stage in the CBC meeting.

2.3 Costed bids have not yet exceeded the available funds (2006), and current opinion in the IHOCBC supports expenditure of the maximum possible amount, rather than the ring-fencing of a percentage to deal with emergent urgent cases in year. The IHOCBC has agreed the principle that unspent or under-spent funds may be flexed to support another approved activity, particularly where this can be done in time to bring forward capacity building action. The CBC has agreed to work by E-mail correspondence to approve actions between meetings.

3. PREPARATION BY THE RHCs

3.1. The whole IHOCBC process depends upon good liaison within the RHCs and thorough discussion at their conferences. The CBC will expect proposals for CB assistance to have been assessed critically by the RHC. The CBC also expects the RHC Chairmen to keep them informed of ongoing projects and ongoing regional or bilateral activities so that duplication of effort can be avoided during prioritisation of bids for assistance.

3.2. It will be clear therefore, that all RHCs must include the following standing items in their agendas:

3.2.1. **S-55.** The RHC/INT Chart Region tables in S-55 should be used to identify deficiencies which could be alleviated or removed with CB assistance, ideally on a regional basis. It will help if delegations are requested to configure their National Reports so as to provide an update on each element of the data-base i.e. surveying, charting arrangements, and MSI. The Chairman should use this opportunity to check that updating information has been passed to the IHB for inclusion in the on-line data-base.

3.2.2. **Input to the IHOCBC.** This item must be used to agree the report to be forwarded to the CBC on ongoing related activities in the region, and to identify and prioritise any bids for assistance which are to be submitted to the CBC. The CBC must be made aware, for example, of World Bank or other projects which are underway, and the relationship, if any, of the proposed IHO CB assistance to such projects.

3.3. Thorough assessment during conferences will help the RHC Chairmen to handle any submissions which emerge in the period between these meetings, and which will require discussion by correspondence. Whilst

there is nothing to stop an individual state from making a submission direct to CBC, the committee will give greater weight to candidate items which are assessed and sponsored by an RHC. If the CBC requires more information about such a bid, it will invariably be referred in the first instance to the RHC Chairman.

3.4. The Chairman CBC will ensure that all reports and submissions are thoroughly reviewed and considered. Where the RHC has a representative on the CBC, they will be asked to comment on or amplify their reports. Most RHCs are now represented on CBC. The committee also plans, wherever possible, to hold its meetings in regions which are most in need of CB assistance. This enables the countries of that region to attend the CBC, and to have the opportunity to raise hydrographic awareness at high political level and to gain insight into the committee's procedures.

4. ASSESSMENT AND PRIORITISATION BY THE IHOCBC

4.1. Once reports on related activities in the RHCs have been heard, the CBC will focus on the assessment and prioritisation of the candidate items which have been submitted. The CBC Management Plan is the matrix which is used to ensure that the committee has full visibility of all current items for their assessment. This matrix is illustrated with fictitious entries at Appendix 1. The current issue of the Management Plan will be found in the IHOCBC section of the organization's web-site. Guidance for RHCs in drafting input to the plan is at Appendix 2.

4.2. During the CBC meetings a colour code is used to high-light those items for the current year which have not yet been completed, and the candidate items for the next year and any subsequent years. The CBC will step through the Management Plan, line by line, to review progress and outcome of items approved for the current year, and to appraise and approve candidate new items. An item may be referred back to an RHC for further evaluation. If the cost of all new bids exceeds the IHO CB annual budget, then the CBC must prioritise the candidate new items. Hence, the quality of the information provided by the sponsor RHC is of critical importance.

4.3. The IHOCBC Chairman and Vice Chairman, assisted by the IHB Secretariat, will monitor feedback from the RHCs during the Work Plan year. They will annotate the Management Plan with the reported out-turn against approved items. In advance of the annual meeting they will provide an updated version incorporating all bids which have been received by the dead-line.

Appendix 1 to Annex “A”

IHO CAPACITY BUILDING MANAGEMENT PLAN (Updated by IHOCBC -)

ACTIVITIES APPROVED FOR 20—BY IHOCBC

Order, Priority, or Status	Sponsor RHC	Country/ countries	Project/ Assistance required	Response	Date/Cost	Allocation	Benefits
√	XYZHC	Unfathomedland	Capacity building in surveying, data management and MSI, as identified by XYCHC visit team.	<p><u>Advice</u> 1 month attachment of Cat A surveyor to develop prioritised survey plan and to identify components of XYCHC regional project for Dipsie Channel survey.</p> <p><u>Training</u> a. 1 Cat A hydrographic surveying training place.</p> <p>b. Attachment of 2 port officials to – HO (NAVAREA Coordinator and charting authority).</p>	<p>\$-.---k (Travel) \$-.---k (Subsistence)</p> <p>\$-.---k (Travel) \$-.---k (Subsistence) Bursary place offered by Country ZZ.</p> <p>\$-.---k (Travel) \$-.---k (Subsistence)</p>		<p>Risk reduction + Potential to reduce risk on regional routes and on flank of significant through route. + Offshore activity in area has high economic significance.</p> <p>Opportunity + Could be included in regional project for survey of Dipsie Channel. + Encourages government engagement and institutional capability. + Good outsourcing opportunities.</p> <p>Risk reduction + Major reduction to risk score on international route, and in cruising areas of great navigational complexity.</p>
√	JKLHC	Obriana, St Patricks, Aubrey and Maturin Islands (Littoralia)	Gulf of Fiction Marine Electronic Highway Project: - survey and charting of main trans-ocean tanker route, and of areas frequented by cruise liners;	<p><u>Advice</u> Assist WB/IMO PSC to draw up survey specifications and to assess contract tenders.</p>	<p>\$-.---k (Travel) \$-.---k (Subsistence) for Cat A surveyor loaned at no charge by Country XX for a total of -- days.</p>		<p>Risk reduction + Major reduction to risk score on international route, and in cruising areas of great navigational complexity.</p>

- regional capacity building to enable routine check/re-survey programme in ports and approaches, and chart update.

Field Activity

Provide contract oversight and QC of survey data, and supervision of field experience for trainees.

\$-.-k
(Out-sourced)

Data Management

Appraise survey data and publish charts/ENCs.

\$-.-k
(Out-sourced)

Training

a. 3 Cat A and 3 Cat B training places in hydrographic surveying.

\$-.-k (Travel)

b. Field experience during surveys for 6 candidates.

\$-.-k (Subsistence)

\$-.-k (Travel)

\$-.-k (Subsistence)

No funding from CBC. To be assessed by MS.

“

Placements to be sought from MS.

+ Major reduction of threat to 4 designated sensitive environmental areas.
Opportunity
+ Component of major WB/GEF + IMO project.
+ Promotes regional co-operation.
+ Improves institutional capability.

Appendix 2 to Annex “A”

GUIDANCE FOR RHCs IN DRAFTING INPUT TO THE IHOCBC MANAGEMENT PLAN

1. The column headings of the IHOCBC Management Plan are reasonably self-explanatory. The task of the committee, and the success of a bid, will be greatly assisted by the effort which the sponsor RHC gives to completion of the 3 columns: Response; Date/Cost; Benefits. In effect the RHC Chairman will need a clear “cost/benefit analysis” (CBA) on which to base his proposal to the CBC. Where the RHC does not have a spokesperson on the CBC, it will be particularly important to ensure that a copy of the CBA is supplied in advance of the annual meeting.

2. **Response.** This column in the plan is reasonably well-developed, and should provide guidance for those framing new proposals. Thus, for example, this section should indicate the number and status of people involved in a proposal, the length of time for which they will be required, and whether travel is involved in the proposal.

3. **Cost.** This column should contain as much detail as possible, divided into clear sub-categories. The CBC should be able to see at a glance the separate cost elements e.g. consultancy fees or other payments; travel; subsistence. The following lessons learned from over-spend on items in the first work programmes of the CBC should be noted:

- a. Flight itineraries¹ must be fully explored before the costs are listed in the bid to the CBC. If possible, some indication should be given of the impact of any changes to the itinerary.
- b. UN allowances should be used to estimate *per diem* subsistence costs. The bid should indicate where any special circumstances, such as security, may enhance these costs.
- c. The bid, and the subsequent allocation by CBC, should make clear whether any costs are expected to be borne by the organising or participating countries.

4. **Benefits.** This column also needs substantial information to support a prioritisation process. Whilst it may rarely be possible to express the resultant benefit of an assistance project in monetary terms, there should be a clear indication of the expected increase in Phase 1-3 capability and resultant risk reduction and other beneficial outcomes for trade and environmental protection. It will always be helpful if the bid can indicate aspects which give a higher prospect of success for a project. A particularly compelling candidate item will be one where the CBC assistance can be shown to improve the opportunity to include hydrography in a bigger project. In this context, RHC Chairmen should note the guiding principles in the IHO strategy for capacity building as laid out in the policy paper in the IHOCBC section of the web-site. The following table suggests some examples of factors which might be taken into account in the CBA.

Opportunity

Funding profile	Component of major project (UNDEP, WB/GEF, IMO). Component of regional maritime project. Bilateral project.
Regional co-operation	Project endorsed by RHC, and supported by all relevant littoral states.
Government engagement	IHO member. Appropriate regulations and oversight (e.g. NHC) in place. Commitment to develop hydrographic capability. Prioritised maritime development plan (incl. survey plan) in place Bilateral SOLAS-type agreement in place
Institutional capability	Phase 1 and 2 of hydrographic capability in place. Candidates for hydrographic training identified.
Resources	Project management in place. Multi/Bilateral assistance in place. Outsourcing opportunities identified and agreed.

¹ Economy class

The CBC will clearly give significant weight to candidate items which demonstrate beneficial outcomes for safety of shipping and life at sea. Some aspects of risk reduction are given in the following table.

Risk

SOLAS	Significant passenger traffic (e.g. cruise ships; ferries). Poor regulation.
Shipping density	Major international port and approaches, major transit areas. Other significant ports and approaches, coastal routes. Significant small-craft activity (fishing, leisure).
Navigational complexity	Unsurveyed or poor quality data. Marginal depths; unstable seabed. High rate of economic development. Severe environmental conditions. Requirements for VTS
Environmental impact	Designated sensitive areas. Other known sensitive areas.
Economic significance	High value economic activity (e.g. major port, oil/gas). Medium value economic activity (e.g. tourism). Low value economic activity (e.g. other well-populated areas).

Annex “B”
(to the IHO Capacity Building Paper)

**ASSESSMENT CRITERIA FOR DEFINITION OF APPROPRIATE
HYDROGRAPHIC CAPABILITY**

Background

1. The IHO’s capacity building strategy lays great stress on the selection of appropriate and sustainable arrangements to enable a coastal state to deliver its obligations under SOLAS V/4 & 9. The services that can be delivered by the country itself, rather than being out-sourced to the hydrographic service of another Member State or to the commercial sector, will obviously depend on the inherent resources of the coastal state. The constraints will not necessarily be budgetary. The appropriate organisation for a small state will often depend upon the size of the pool of skilled manpower which it can sustain.

Aim

2. The aim of this Annex is to provide a process for the identification of appropriate capability during technical assessment visits and the subsequent stages of analysis within the RHCs and the IHOCBC. The process consists of a series of questions reflecting the 3 phase approach to capacity building which is defined in the IHOCBC Strategy Paper. A criterion is required for the assessment of the best means of providing each of the SOLAS V services, and this is provided in this paper in the form of a matrix.

Process

3. The series of questions follows closely the logic of the standard questionnaires and reports used in IHO technical visits. The same logic is followed in the S-55 questionnaire. The first four questions are fundamental to the assessment process.

Q1. Is there a national focal point for hydrography?

- a. Is the government made aware of its responsibilities under SOLAS V/4 & 9?
- b. Is M-2 or equivalent available and implemented to some degree?
- c. Is the government aware of the importance of hydrography and oceanography for sustainable development, economy, safety of navigation, the law of the sea, prevention of natural disasters, integrated coastal management, and protection of the marine environment?

Q2. Is the importance of hydrography in national policy and planning acknowledged at government decision-making level?

- a. Is there an MSA or equivalent which receives IMO input and guidelines?
- b. Is there a National Hydrographic Committee or equivalent?
- c. Is the state represented at the RHC?
- d. Is the state a member of IHO?

Q3. Are significant challenges or deficiencies apparent from the S-55 data-base?

- a. MSI.

- b. Surveys.
- c. Charting.

Q4. What arrangements are appropriate and sustainable for the country?

People Facilities/Equipments Training

- a. MSI.
- b. Surveys.
- c. Charting.

4. The following supplementary questions are designed to identify appropriate enabling procedures, once a suitable national organisation has been defined.

Q5. What authorisation is in place for hydrographic activity?

- a. Would national legislation be sufficient, appropriate and efficient?
- b. Is there an official policy for the implementation of SOLAS V/9 responsibilities?
- c. If yes, is it currently out-sourced to another Member state or to the private sector?
- d. Is there a national plan, including a prioritised survey and charting programme? If any, is it limited to harbours and approaches only or is it more comprehensive?
- e. If no, what would be the main driving forces to set up such a plan?
- f. Are adequate funding arrangements in place?

Q6. What measures are in place for accountability for output?

- a. Have key targets and reporting dates been set?
- b. Have timescales been set for enabling activities?

Q7. Is the proposed national hydrographic organisation sustainable?

- a. Is there an adequate pool of skilled personnel?
- b. Is there a viable plan for career development and succession planning?
- c. Is there an equipment investment plan to deal with wear and tear or obsolescence?

Q8. Has the national plan taken advantage of opportunities to pool resources with neighbouring states?

A Matrix of Assessment Criteria

5. The following table aims to assist the definition of the appropriate and sustainable solution for delivery of each the 3 main outputs required by SOLAS V (**Q4**). A worked example indicates how it would be used to ensure assessment of a realistic level of capacity for the coastal state.

Table of Arrangements for SOLAS V/9 Hydrographic Services

<u>In-house Capacity</u>	<u>MSI</u>	<u>Survey</u>	<u>Charting</u>
Not required ^ Partial v Full		Outsource all aspects.	Provide data to Charting HO.
		Conduct port check surveys. Out-source remainder,+/- QC.	Compile Fair Sheets, and pass to Charting HO.
		Produce/conduct prioritised national survey plan, +/- QC, /- port check surveys.	Compile and maintain chart base and pass to producer/distributor HO.
	Produce Local/Coastal/NAVAREA Warnings. Communicate effectively with charting HO. Implement GMDSS.	Produce/conduct prioritised national survey plan	Produce, maintain, distribute paper charts + publications. Produce, maintain, distribute ENC's + digital publications.

Table of Arrangements for SOLAS V/9 Hydrographic Services

Example of appropriate options for small island state with limited resources

<u>Capacity</u>	<u>MSI</u>	<u>Survey</u>	<u>Charting</u>
<p>Not required</p> <p align="center">^</p> <p>-----</p> <p>Partial</p> <p>-----</p> <p align="center">v</p> <p>Full</p>		Outsource all aspects.	Provide data to Charting HO.
		Conduct port check surveys. Out-source remainder, +/- QC.	Compile Fair Sheets, and pass to Charting HO.
		Produce/conduct prioritised national survey plan, +/- QC, +/- port check surveys.	Compile and maintain chart base and pass to producer/distributor HO.
	Produce Local/Coastal/NAVAREA Warnings. Communicate effectively with charting HO. Implement GMDSS.	Produce/conduct prioritised national survey plan	Produce, maintain, distribute paper charts + publications. Produce, maintain, distribute ENCs + digital publications.