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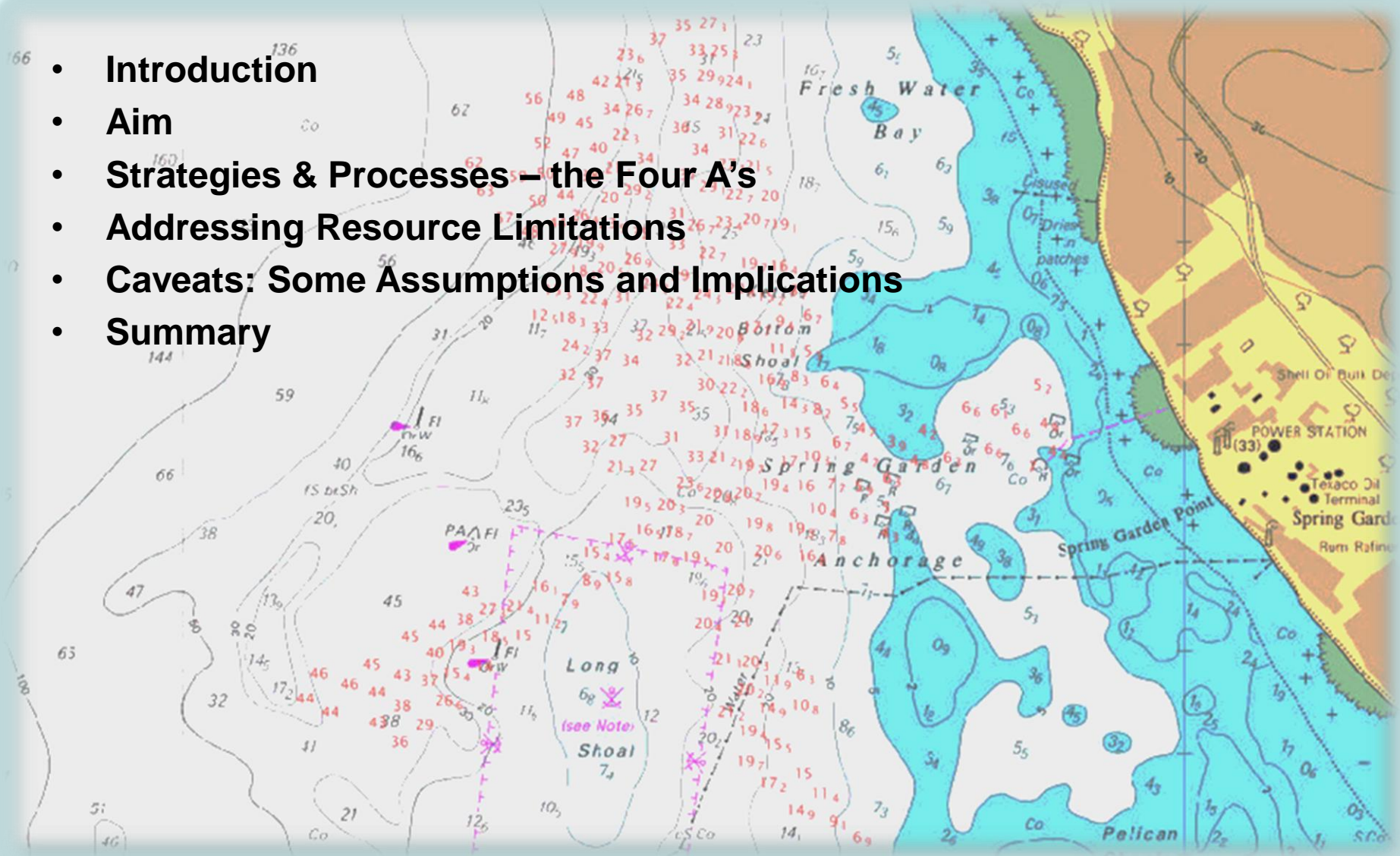


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Introduction



- Capacity Building (CB) is a strategic component of the International Hydrographic Organisation (IHO) approach to achieving its mission and objectives.
- Industry proposes it can contribute meaningfully to a CB initiative led by the IHO.



Introduction

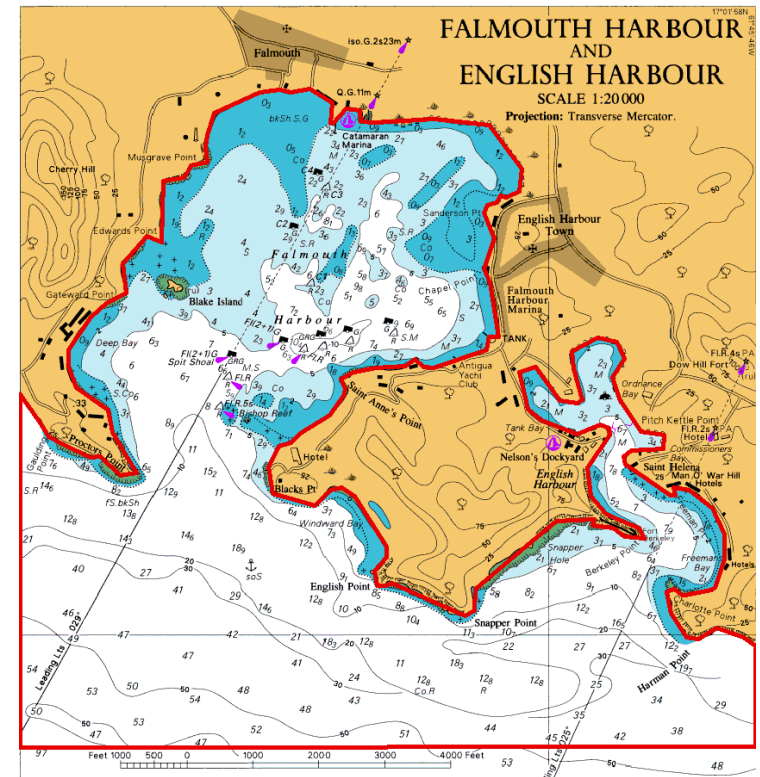


- We are going to pose some fundamental questions for later discussion....
- In December 2003 the United Nations General Assembly adopted Resolution A/RES/58/240 on Oceans and Law of the Sea that dealt, in large part, with safety of navigation.
- This Resolution welcomed the work of the IHO and the RHCs in CB
 - to improve hydrographic services,
 - including the mobilization of resources
 -and building of **capacity** with support from international financial institutions and the donor community.
- So, does that mean that everyone needs
 - A hydrographic office?
 - A hydrographic capability?
 - Intensively-trained staff with perishable skillsets?
- We will return to this in due course

Aim



- The aim of this presentation is to introduce the concept of addressing resource limitations of the IHO CB Programme through the collaboration with industry.



Strategies & Processes – the Four A's



- The IHO has a three phase development strategy to building a national hydrographic capacity:
 - **Phase One** encourages all states to recognize their national responsibilities for the provision of hydrographic services and initiate the collection and dissemination of marine safety information. This can be met either by a state developing its own capability or through agreement with another state to provide these services on its behalf.
 - **Phase Two** of a CB program involves the provision of advice and training assistance to support the creation of a hydrographic surveying capacity in a particular country.
 - **Phase Three** supports further development of the national hydrographic service including production of paper and electronic charts and publications.

Strategies & Processes – the Four A's



- Underpinning the above strategy the IHO has developed a Four Step process:
 - Awareness
 - Assessment
 - Analysis
 - Action
- Of these:
 - Awareness of current limitations and requirements is well addressed
 - Assessment of national status regarding hydrographic capability is accurate
 - Analysis of the problems and recommended solutions is comprehensive and pertinent
-but Action, and the ability to support efforts to enact change and improvement based on advice, is falling short of necessary LOE

Strategies & Processes – the Four A's



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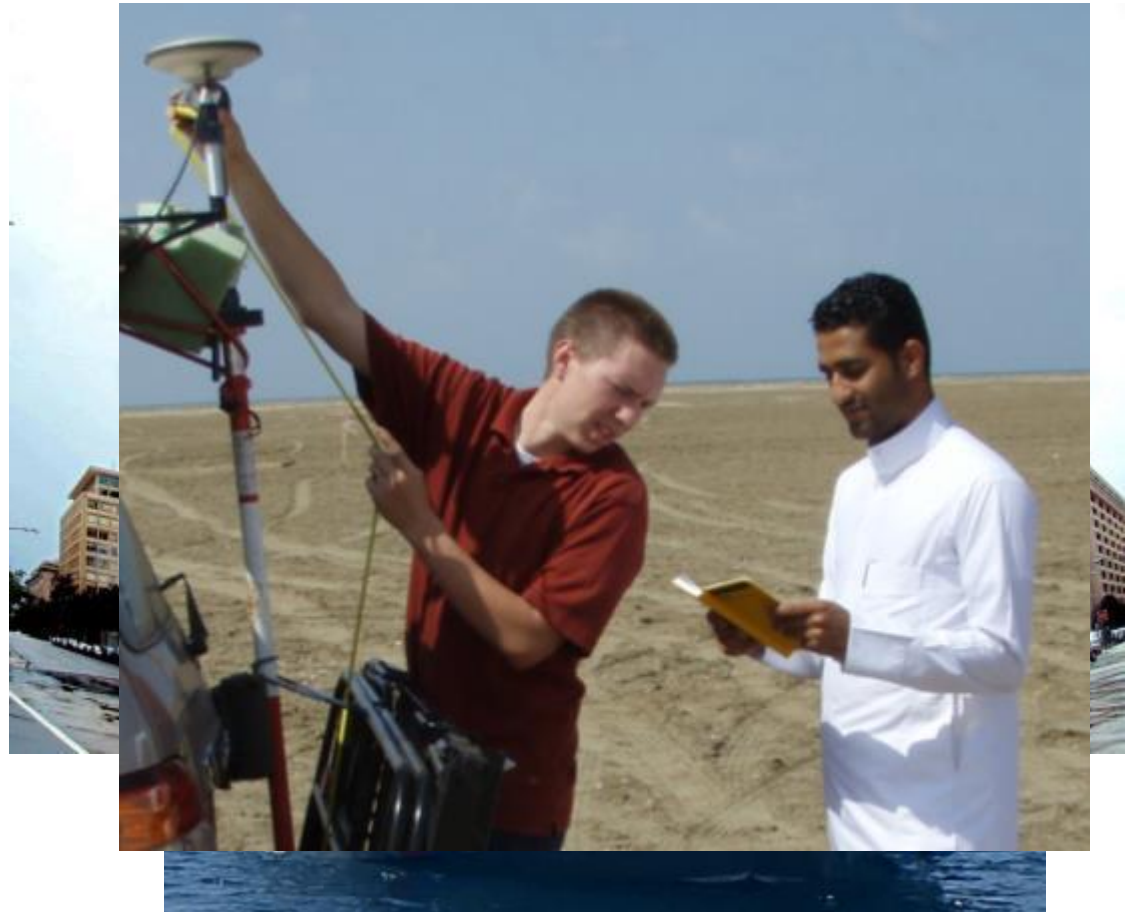
- Many resource limitations can be resolved through Industry support and cooperation to the IHO CBSC.
- 6 recent Industry contributions to CB in the MACHC were extremely well received and provided an opportunity to demonstrate multi beam technology, modern processing and hydrographic data compilation techniques:
 - to over 25 personnel in Barbados (Nov 2009)
 - 14 personnel from over 9 nations in Antigua (Jun 2011)
 - via a Hydrographic Surveying and Nautical Charting Workshop in Haiti (Sep 2011)
 - 2 hydro survey/processing workshops on behalf of the Cuban Govt (GeoCuba) (2011; 2013)
 - A combined training/survey ops/SDB accuracy study in 2013 organised with UKHO/Kongsberg/Proteus



Addressing Resource Limitations



- The primary areas of resource enhancement that industry collaboration would seek to address are:
 - Funding
 - Education
 - Training
 - Organic Capability
 - Sustainability



Addressing Resource Limitations: Funding



- The CBSC co-operates closely with the RHCs to carry out assessment studies within a five year work programme.
 - A Capacity Building Fund has been established to provide support for technical assistance, training and education, financial assistance for participation in IHO events and start-up funding for hydrographic elements of projects.
 - The allocation of funds follows a set procedure
 - The CBSC decides on all priorities and amounts to be allocated on a case by case basis.
 - Contributions from donor countries and institutions are welcomed
- To Industry, the last bullet is a problem....efforts to secure support from stakeholders and responsible contributors must be based on a firmer principle of participation.

Addressing Resource Limitations: Funding

- Whilst it is evident from discussions that the mechanisms are in place to bid for enhanced funding, leverage for such has yet to be fully exploited.
- It is not considered that the current CBSC funding or structure is intended to support the IHO-Industry collaborative initiative outlined here*
- Separate and substantial funding from external sources must be robustly proposed and argued.



*http://www.iho.int/mtg_docs/com_wg/CBC/CBSC10/CBSC10.htm

Recent Industry Participation in IHO CBSC



Kongsberg/Caris/Fugro

27 April 2012

IHO CAPACITY BUILDING – INDUSTRY CONTRIBUTION

INTRODUCTION

Capacity Building (CB) is a key component of the International Hydrographic Organisation (IHO) approach to achieving its mission and objectives. Capacity Building is focused on the development of knowledge, capacity and capability in maritime safety information, surveying and paper and digital chart production among established and emergent Hydrographic Offices worldwide. Industry, acting as a consortium, has proven it can contribute successfully to this IHO led initiative. Through the enhancement of hydrographic capability nations will not only be able to contribute significantly to their SOLAS legal obligations but also enhance the economic possibilities of their infrastructure.

AIM

The aim of this paper is to introduce the concept of addressing resource limitations of the IHO CB Programme through the collaboration with industry.

http://www.iho.int/mtg_docs/com_wg/CBC/CBSC10/CBSC10-15C-White_Paper_-_Industry_Contribution_to_IHO_CB.pdf

Recent Industry Participation in IHO CBSC



Kongsberg/Caris/Fugro

20 May 2013

IHO CAPACITY BUILDING – INDUSTRY CONTRIBUTION - REVIEW AND UPDATE

BACKGROUND

At the IRCC4, held in Singapore 7-8 June 2012, representative companies of the international hydrographic industry submitted a paper suggesting the roles and support which Industry could provide in the fulfillment of the IHO's Capacity Building (CB) initiative. The paper addressed ways to overcome resource limitations in various regions which were (are) over and above the capacity for leading industrial national governments to address. The paper (CBSC 10-15C) can be accessed at:

http://www.iho.int/mtg_docs/com_wg/CBC/CBSC10/CBSC10.htm

Developed to meet the IHO's 3-Phase strategy and within the framework of the 4-step process of Awareness, Assessment, Analysis and Action, Industry suggested solutions in the following key areas necessary for the successful implementation of an enduring CB policy:

CBSC11-04 (not yet published on the IHO website)

Addressing Resource Limitations: Education and Training

- The education facet of CB is viewed as a fundamental element, essential for the generation and maintenance of an organic capacity at the national level.
- Education in this sense may be obtained in several ways:
 - Traditional Education Curricula
 - Nationally Approved Academic Distance Learning
 - Bespoke in-country Education and Training



Addressing Resource Limitations: Education and Training



- Industry can support the equipment and continuation training until operators are confident and qualified to conduct these functions independently.
- In-country donor organisations could also include those that would benefit directly from improved hydrography e.g. port associations/operators, cruise ship companies and transport ministries etc.
- Industry can support these types of initiatives on a cost plus basis.



Addressing Resource Limitations: Organic Capability



- Returning to this fundamental element:
- In December 2003 the United Nations General Assembly adopted Resolution A/RES/58/240 on Oceans and Law of the Sea that dealt, in large part, with safety of navigation.
- This Resolution welcomed the work of the IHO and the RHCs in CB
 - to improve hydrographic services,
 - including the mobilization of resources
 -and building of capacity with support from international financial institutions and the donor community.

Addressing Resource Limitations: Organic Capability



- But....
- Every Coastal State has a SOLAS responsibility
 - This ensures SoN in its waters
 - The IHO CB Phase 1 tries to frame this requirement (provision of MSI)
- This does not necessarily mean that every Coastal State needs to have a fully-fledged hydrographic office, but it does need:
 - dependable and well-communicated structure within the state's government
 - dependable and well-communicated co-operation with Industry and international partners
- It is not expected each and every nation will be able to support a full multibeam or equivalent system
 - These services can be supplied through the above relationships and partnering frameworks
- Industry could support the nation(s) in question in the longer term through an appropriate funding mechanism.

Addressing Resource Limitations: MSDI Capacity Building Workshops



**East Asia Regional Hydrographic
Commission 2011**



**North Indian Ocean Regional
Hydrographic Commission 2012**



**Southwest Atlantic Regional
Hydrographic Commission 2012**



**Meso American & Caribbean
Hydrographic Commission Marine
Economic Infrastructure Program**



Addressing Resource Limitations: Organic Capability



- Kongsberg Maritime and CARIS have led the Industry contribution initiative from the commencement of Industry involvement in IHO Capacity Building
 - through the provision of equipment, software and personnel.
- Fugro, HYPACK, and Hemisphere have also made contributions.
- All the companies are leaders in their fields
 - Together, they can provide the IHO with a coherent and consistent contribution to IHO aims and objectives.
- It is not considered that the CBSC funding contribution will require any major uplift, especially if other funding agencies become actively involved.
 - It may, however, require the current CBSC funding profile to be reconsidered.
- Industry cannot lead CB: this must remain under the auspices of the IHO.
- Industry fully realises that this proposal will result in a long term and not a short term gain.

Addressing Resource Limitations: Sustainability



- Sustainability is a metric to the success of a long-term proposal
- Can be monitored by the international community by the study of:
 - the level of activity
 - volume of output
 - ...and actual quality of hydrographic contributions made by a host nation.
- Attainment of organic capability and a stable organization, workforce and programme of work will assure sustainability
 - latter elements are much more dynamic
 - this can erode the long term effects of such a program.

Example of Sustainability: Mozambique Coast Map IO



The focus of COAST-MAP-IO is to increase the capacity of countries to collect and use bathymetric and topographical data to support management of tsunami risk in coastal areas.



Intergovernmental
Oceanographic
Commission

Participating countries: Mozambique (INAHINA), Comoros, Kenya, Madagascar, Mauritius, Seychelles, Tanzania, Bangladesh, Maldives, Myanmar, Sri Lanka, Thailand



Addressing Resource Limitations: Sustainability



- Imperative that the various elements described previously are retained through mechanisms such as IDIQ (Indefinite Delivery Indefinite Quantity) contracts so that any 'top-up' of funding requests/solicitations, education, training or organic capability can be implemented:
 - following consultation with the nation concerned
 - and the independent assessment body (i.e. the IHO CBSC).
- Industry is well placed to react to and deliver the hydrographic needs of nations in order to assure a sustainable capability.



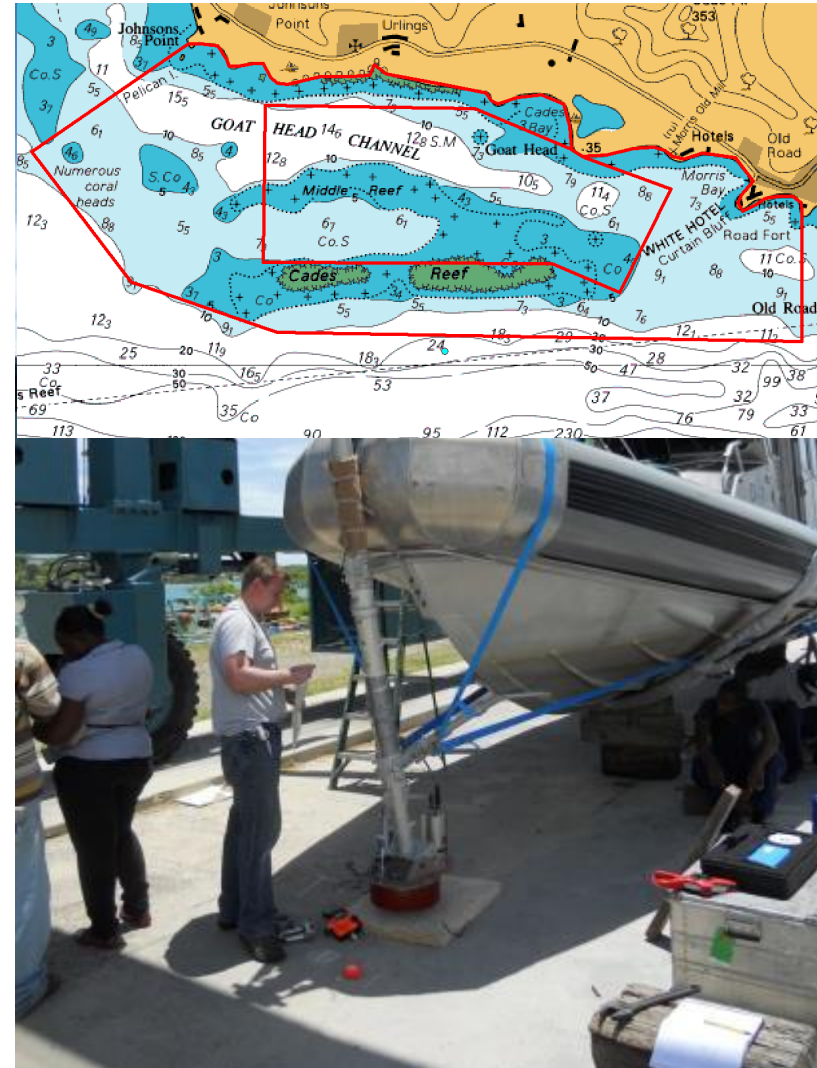
Caveats: Some Assumptions and Implications

- The involvement of Industry needs to be recognized as a collaborative approach with the IHO, not in competition or replacement to it.
- Industry training costs and all incurred direct overheads are to be covered, such as travel and accommodation of personnel.
- IHO must continue to lead at the political level
- A sustainable continuity training programme needs to be agreed.



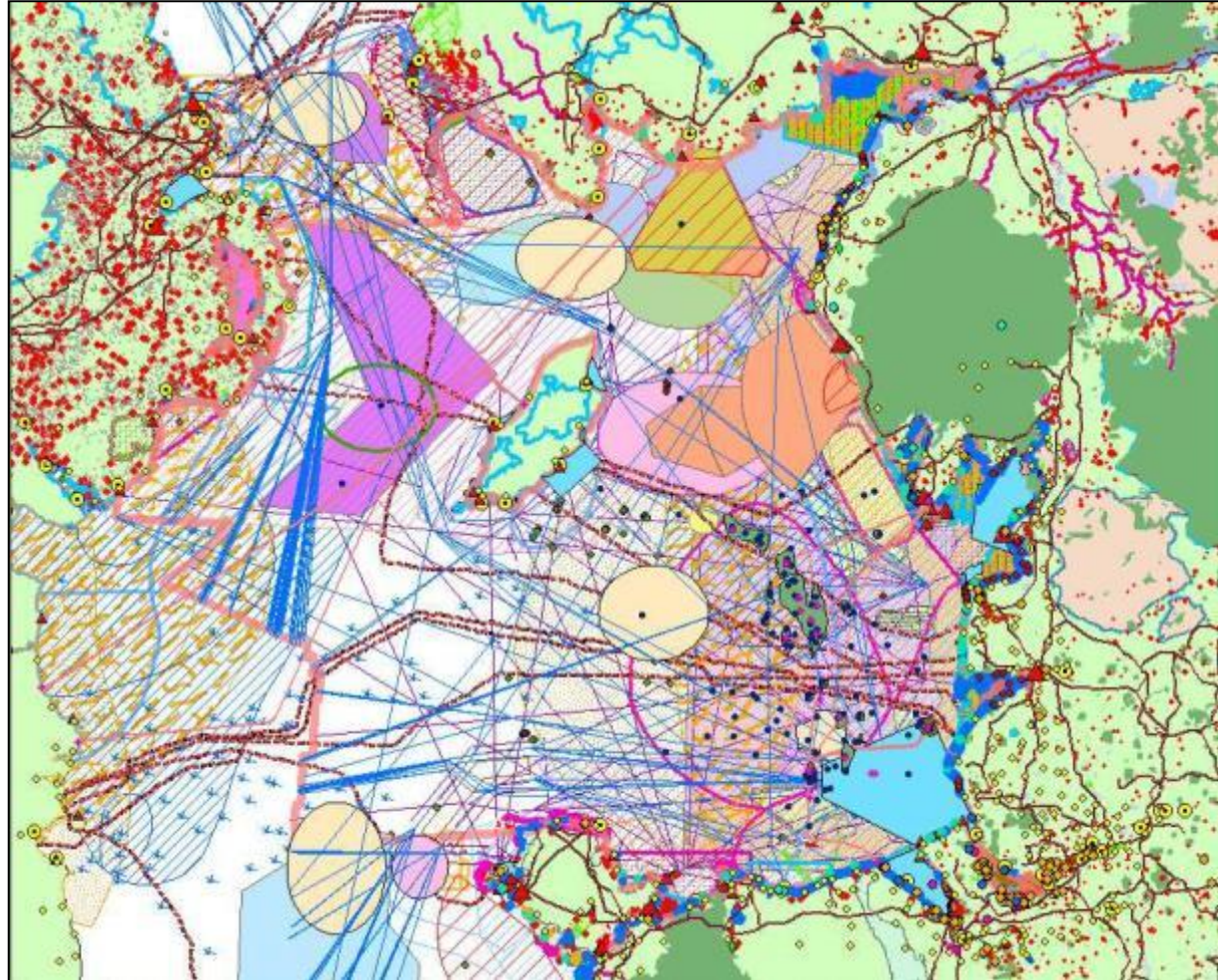
Caveats: Some Assumptions and Implications

- The Host Region / Nation must have:
 - Recognized and stated requirements for data collection, charting, and other uses;
 - Sustainable resources;
 - Demonstrable real-term contributions in the form of personnel, facilities, and platform(s);
 - Access to and permission to use existing national data, both digital and analogue, for use in the program;
- The host must become the major stakeholder.



Caveats: Recognising Potential Stakeholders

- This slide is a good representation of why this is important
- Remember this is only a small portion of a typical coastal scenario
- Land Use
- Tourism
- Oil & Gas
- Mariculture
- Coastal Defence
- Ports & Navigation
- Military Activities
- Culture
- Conservation
- Dredging & Disposal
- Submarine Cables
- Fishing
- Renewable Energy
- Marine Recreation
- Mineral Extraction



Caveats: Some Assumptions and Implications



- A minimum of IHO CAT B certification for recipient nation personnel should be an aim but this should not be restricted to government employees where Port Authority personnel (for example) may be a better choice.
- This applies equally to both hydrographic and cartographic disciplines
- Training outside the current IHO CB Programme (Phase 1) should be aimed at one region / nation at a time.
- Aim should be organic strength-in-depth beyond any reliance on one person in order to sustain a fit-for-purpose national hydrographic programme.

Caveats: Some Assumptions and Implications



- Language barriers – real or assumed – must be identified at an early stage
 - participating nations must carefully choose their staff
 - based on their ability to effectively communicate in an international forum.
- All training should be a combination of practical and classroom training.
- It is the assumption that, as a minimum, data would be released for the updating of charts:
 - Industry could support the collection of data in accordance with IHO S-44 Standards and generate appropriate supporting documentation.
 - Data ownership and future distribution shall be agreed in advance when developing the plans for surveys between the CBSC and Host Nations

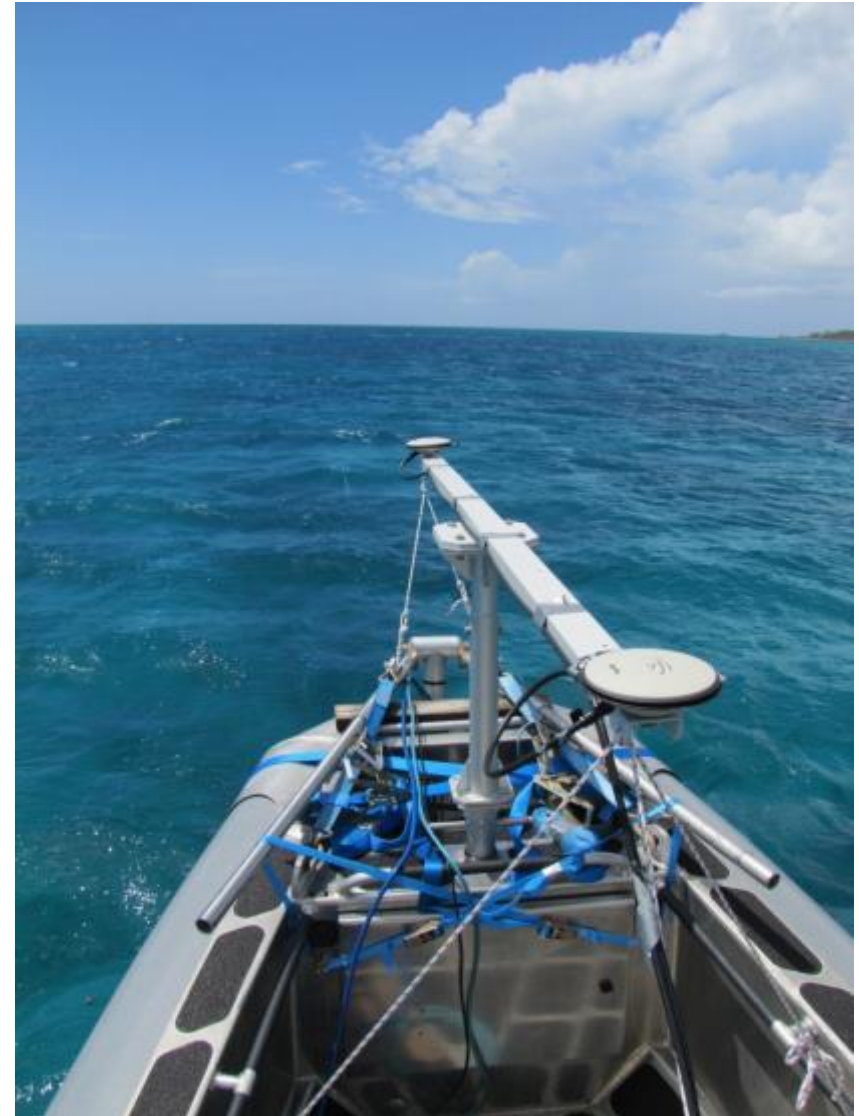
Summary



- This entire concept relies upon the IHO recognizing the potential of an Industry contribution to Capacity Building.
- Industry cannot undertake CB alone – neither can IHO or the host nation.
- IHO should become increasingly aware of the real and viable mechanism for output-focused Capacity Building that industry engagement provides.
- Industry can contribute through technology development, innovation and professional services in ways that cannot be initiated and/or supported by a national hydrographic agency alone.
- Derived capability and engagement through Industry participation has the potential to release future funding for regional/host nation organic capability.

Summary

- Any strategy would have to be in line with IHO guidelines
 - either with individual nations,
 - collective nations (eg. Island groups)
 - ...or at RHC level.
- Industry expects that stakeholders and recipients will contribute to CB efforts.
- Sustained support, education and training must be included in any package.



Summary

- Provision of end-to-end training in a local environment – an IHO aim – is the primary deliverable of such a scheme
 - with an IHO identified and supported output
 - e.g. usable chart data in a critical area.
- Scheme should allow Industry to:
 - recover costed outlay
 - develop potential follow-on business opportunities with the participating nations
 -but as agreed under the regional IHO schema.



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