

**ADB TA 7178-SOL:  
Establishing the Solomon Islands Maritime Safety Administration**

**INFORMATION PAPER: HYDROGRAPHY: SIMSA ROLE**

**INCLUDING NOTES ON MEETING WITH  
INTERNATIONAL HYDROGRAPHIC ORGANISATION, HONIARA OCTOBER 2009**

**A. Background**

Hydrography, nautical cartography, aids to navigation and the promulgation of maritime safety information are key factors for maritime safety and for the protection of the marine environment. They are also essential elements in the development of a nation's infrastructure, not only in managing the ports and maritime transport sector, but also the managed development of marine resources and protection of marine ecology. All maritime countries have the responsibility for charting their own maritime areas as well as for the circulation of the relevant nautical information.

In Solomon Islands, the Marine Department was originally responsible for this activity and its SI Hydrographic Unit (SIHU), with assistance from overseas (Australian Defence Cooperation Program, particularly) made significant progress in developing the capability and resources to discharge this obligation. However, responsibility for hydrography and the management and upkeep of navigational charts for SI waters has rested with the Ministry of Lands, Housing and Survey since 1984. Since this change, external support dwindled away and there has been little done and the charts now include much outdated information. Logically, the maritime regulator is the logical entity to manage this obligation as marine cartography and the responsibilities that come with it are very different from those pertaining to terrestrial cartography. It is therefore planned that the responsibilities for hydrography and nautical cartography will become part of the role of the Solomon Islands Maritime Safety Administration as it is established in 2010.

The responsibilities and obligations are part of the international SOLAS (Safety of Life at Sea) convention, and SI is party to the convention through its membership of the International Maritime Organisation (IMO). This imposes treaty obligations on SIG.

Charts for the region include a full set held, maintained and distributed by the British Admiralty, plus some developed by Australia (Royal Australian Navy), and some locally developed charts from the time before handover. The charting authorities pay royalties to the maritime nation concerned on sale of charts. Private sector companies also use the data to produce specialised charts, not adopted by the IHO but a potential source of royalty revenue for the nation concerned.

Generally the SI charts in the BA series are reasonable in terms of coverage, and are metric (compared to those for PNG, for instance, which before recent major upgrade, still used imperial measurements (fathoms, feet etc.). The series comprises small scale charts covering large areas, medium scale charts for coastal passages and large scale of specific

areas such as port approaches etc. Large scale plans have been incorporated into some of the medium scale charts, providing effective coverage. However, the information on the charts has not been updated and they are not compatible with navigation by GPS (Global Positioning Systems), a wide spread practice.

SI is signatory to, or has acceded to, a range of international conventions that impose treaty obligations. One such convention is the IMO's SOLAS (Safety of Life at Sea) protocol, which requires maritime nations to ensure that information required for safe navigation in its waters. As a member of IMO, SI Government has an obligation to carry out certain functions which, if not carried out, may lead to significant legal exposure if an incident occurs. SI archipelagic nature, its complex coastline and its location between Australasia and Asian regions makes it particularly vulnerable and there are real risks for vessels operating in or passing through the waters.

In addition to risks, there are also a range of uses for hydrographic data, and up-to-date charts and data available to both government and private sector users will benefit economic development in ways as diverse as allowing deployment of larger, more efficient commercial vessels, and providing base data for mineral and resource development.

The International Hydrographic Organisation (IHO) is the international body charged with the standardisation and maintaining of navigation charts worldwide. Its formation predates both the UN and the League of Nations. The following notes and recommendations are based on discussions held during the visit by IHO executives to Honiara in October 2009.

This paper discusses the exploratory talks held between MID/ESIMSA and IHO, and develops proposed actions and recommendations designed to assist MID and SIG to develop a policy and strategy for the proposed shift of responsibilities, and plan a manageable and sustainable approach to SIG's SOLAS obligations.

## **B. IHO organisation and October 2009 mission**

The IHO is an intergovernmental technical organization, comprising 80 Member States. The IHO seeks to ensure that all States with coastlines and maritime interests provide adequate and timely hydrographic data, products and services, thereby advancing maritime safety and efficiency in support of the protection and sustainable use of the marine environment. The IHO is the recognised competent authority of the United Nations for hydrography and nautical charting. The International Hydrographic Bureau (IHB), based in Monaco, provides the secretariat function for the IHO.

The Deputy Superintendent of the SI Marine Division, Captain Pascal Ohoau, has attended meetings of the South West Pacific Hydrographic Commission (SWPHC) and a hydrographic awareness workshop and seminar conducted by the IHB and funded by the International Maritime Organization (IMO) as part of its Technical Cooperation program. He explained the deteriorating state of hydrography and nautical charting in Solomon Islands. As a result the SWPHC recommended that an IHO technical visit to the Solomon Islands be made to assess the current status of hydrography and to raise awareness in the country of the importance of hydrography and nautical charting. This visit, by IHO Director Robert Ward and Chief

Engineer Michel Huet, took place in October 2009 and a draft report has been provided for Marine Department and TA comment.

### C. Benefits for SI of involvement in IHO

The draft IHO report makes the comment:

*The Government and its Administration appear to be unaware of the fundamental importance and benefits of hydrography and nautical charting or its obligations under SOLAS V/9 and SOLAS V/4. The only organization that appears to appreciate the importance of hydrography and nautical charting services is the emerging SIMSA.<sup>1</sup>*

We have corrected this to note that the Marine Department already understands the importance of supporting navigational charting, but the comment on lack of awareness in the administration as a whole appears accurate.

The major benefit of resuming active management of hydrographic obligations is that SI is currently not complying with its treaty obligations to IMO. SI is a party to SOLAS and has treaty obligations under Regulations 4 and 9 of the SOLAS Convention. It has a legal obligation under international maritime law to comply with its obligations. In addition, there is significant exposure under international law, and SI waters pose significant risk of accident, not only to domestic and foreign vessels trading in the waters, but to vessels in transit and legitimately using SI waters. SI is exposed if a marine accident occurs within SI waters that could have been avoided or mitigated if SI was meeting its SOLAS obligations

Aside from risk avoidance, there are, however, significant other benefits to having up-to-date data. These can include:

- **Tourism:** Better access for cruise vessels
- **Trade efficiency and cost constraint:** Better and shorter routes for overseas and domestic vessels
- **Economic/industrial development:** Useful data for research into resources, minerals exploration, fishing grounds etc..
- **Safety and environmental hazard:** The lack of reliable charts impact on public safety and increase the risk of environmental catastrophe
- **Economic:** Lack of reliable charts and up-to-date hydrographic data increases research costs, discourages development of minerals and seafood resources, impacts on the efficiency of marine operations, both domestic and international by not facilitating shortest economic routing

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<sup>1</sup> 2009 IHO: *Report: IHO Capacity Building Visit to the Solomon Islands 26-29 October 2009* – Robert Ward; draft for comment

- **Revenue earning:** There is a range of revenue earning possibilities. Currently Lands and Survey will be receiving royalties from the global charting organisations (UK in particular). Royalties can also be earned from the private sector where hydrographic data are used to develop maps or specialised charts for developments etc. Aside from this, the actual sale of charts is a retail opportunity. With no official chart agency currently in SI, charts are ordered overseas and airfreighted in at significant cost. Locally printed charts could provide a substantial revenue stream.

There have been studies undertaken by Australia and Canada (1992) and APEC in 2002 that have suggested a cost to benefits ratio of 1:10. In particular, the APEC study, which used the Philippines as a case study, is most relevant geographically and topographically. A copy of the report is held by the TA .

#### **D. Levels of membership**

There are different levels of membership of IHO open to SIG, from associate membership of the regional hydrographic commission to full membership of IHO, which brings significant benefits but also imposes significant obligations, not least in costs.

- The first level, associate membership of the South West Pacific Hydrographic Commission (SWPHC), provides the opportunity for SI to be represented in the region and, more importantly, to have access to information and support, including the opportunity to apply, through the SWPHC, for training under the IHO Capacity Building Program. (For instance, the IHO sponsored training scheduled to be held in Australia in 2010.). This also allows for establishing liaison with the UKHO's Regional Team 5B to ensure new navigationally significant information is forwarded and included in existing charts of the country, and to underpin the payment of royalties
- Full membership of the IHO which has more direct benefits including a full voice in IHO affairs, but would incur ensuring on-going funding for annual contributions (about €9000 per annum up to 100,000gt on registry) and travel support for SI representatives to attend relevant meetings.

#### **E. Issues for SI**

The main issues for Si are:

##### **1. Deciding the level of activity:**

The options range from membership of the regional grouping, easy to achieve and costs limited to attendance at (and possible hosting of) periodic meetings, not dissimilar to current involvement, up to full membership of IHO, with associated costs and obligations. The issue will be to decide the level of involvement, and to develop a strategy to vary this as needs and resources dictate.

Full membership may be attractive if there is a serious intent to expand the SI registry (e.g., supplementary or second registry) but this would be a long term aspiration, requiring a proper Costs Benefits Analysis before committing. There are significant costs associated with membership, including the annual fee which is pegged to the total tonnage of vessels on the nation's registry (in SI case the lowest category of less than 100,000 gt would apply, currently set at €9,000pa.). Cost would also be incurred meeting obligations to attend meetings held world-wide, and potentially hosting these from time to time.

Other levels of involvement can be achieved without the same financial imposts, and the move to membership of the Regional Hydrographic Commission (SW Pacific grouping) would confer significant benefits without costs substantially greater than those being incurred currently.

## **2. Sustaining membership**

An issue, and identified as a risk by IHO executives during the October 2009 visit, is sustainability of any arrangement. If a commitment is made but required financial or attendance obligations are not fulfilled, membership can lapse. It may be difficult for SIG to maintain enthusiasm. Although there are significant downstream benefits for supporting industrial and economic development, it is a fact that hydrography is not an activity that will grab the electorate's interest. It is not a vote generator.

## **3. Issues of existing/past membership**

An issue that will need to be addressed is that there may be outstanding debts for activities related to chart sale activities in the past. If regional actors are to be approached, it may be prudent to ascertain first if past debts have been written off. The new unit will not want to start life with an invoice for past dues.

## **F. Funding and opportunities**

Initial action to formally join IHO's regional program does not require significant funding beyond the current 'observer' status. No major funding is required. However, a request by IHO for SI to host a conference in 2010 is under consideration, perhaps to coincide with signing up for the regional committee. (Given the current shape of SI finances, this opportunity may have to be forgone.)

If the IHO recommendations are followed, there will be the need to consider equipping the fledgling SI Hydrographic operation with basic tools, estimated by IHO in the order of USD140,000, with an additional USD50,000 for training. This is beyond the scope of the current TA but may be sought, either as a cash contribution or in kind (equipment provision, training and mentoring) by Australian or NZ maritime organisations, or through aid (NZAID was recently looking for ways to invest small amounts in the SI marine sector). It is noted that Australia has a direct interest in the SI region, having its own series of charts and using SI waters for strategic and training purposes, mine hunting etc.

It is noted elsewhere in this paper that there are revenue opportunities to be explored.

## G. Options for SI

The following recommendations are extracted from the IHO report and spell out the options available to SI:

“Based on the discussions held and from the information provided, the relevant Solomon Islands authorities should consider the following actions:

- a. The Solomon Islands government to formally designate an authority, such as SIMSA, to be responsible for ensuring the provision of the national hydrographic service.
- b. The Solomon Islands government to ensure that the designated national hydrographic authority establishes at least:
  - 1) a national MSI Coordinator position, and
  - 2) a hydrographic surveyor and/or a survey technician position.
- c. The newly designated national hydrographic authority (*SIMSA?*) to seek associate membership of the South West Pacific Hydrographic Commission (SWPHC).
- d. The newly designated national hydrographic authority (*SIMSA?*) to apply, through the SWPHC, for MSI training under the IHO Capacity Building Program. IHO-sponsored MSI training is programmed to be held in Australia in 2010.
- e. The newly designated national hydrographic authority (*SIMSA?*) to establish liaison with the UKHO's Regional Team 5B to ensure new navigationally significant information is forwarded and included in existing charts of the country.
- f. The newly designated national hydrographic authority (*SIMSA?*) to obtain at least one outfit of portable hydrographic surveying equipment. An estimated breakdown of cost is shown in Annex B. Consideration should also be given to ensuring funding is available for ongoing maintenance of the equipment and for the training and requalification of personnel;
- g. The newly designated national hydrographic authority (*SIMSA?*) to seek appropriate training for hydrographic personnel.
- h. The newly designated national hydrographic authority (*SIMSA?*) to employ an overseas hydrographic adviser to guide and assist in the re-establishment of an in-country hydrographic capability.
- i. The Solomon Islands government to form a national hydrographic consultative committee, chaired by the designated hydrographic authority, to coordinate national hydrographic requirements. This committee should include representation from all stakeholder groups, including but not limited to: maritime police, ship operators, port authorities, maritime education authorities, provincial representatives, tourism operators, fisheries, geology, and coastal survey, and SOPAC and other potential assistance agencies;
- j. The Solomon Islands Department of Lands and Surveys to relinquish responsibility for the extant Bilateral Arrangement between the Solomon Islands Department of Lands and Surveys and the UKHO done on 27 August 2004, and signed for the Solomons by the Permanent Secretary to the newly designated SI hydrographic authority;
- k. The Solomon Islands Department of Lands and Surveys to transfer all hydrographic records and materials to the custody of the newly designated hydrographic authority. This would include survey records, charts, chart documentation and any hydrographic equipment (if still existing). The Surveyor-General has indicated that such a transfer is logical and acceptable to his Department; and
- l. The Solomon Islands government to initiate to apply for membership of the IHO (details available in IHO publication M-2), including ensuring on-going funding for annual

contributions (about €9000 per annum) and travel support for SI representatives to attend relevant meetings.”

#### **H. SIMSA role**

It is clearly established that SIMSA is to take over the responsibility from the Department of Lands and Survey. The current arrangements whereby Lands and Survey have the responsibility will require to be changed. In view of the current lack of activity and resources, both equipment and staff, this appears to be an administrative transition only.

In terms of resuming SI obligations and responsibilities, the TA recommends action on many of the key points, although action will vary between items, some of which may not be fully addressed or will require more work in terms of developing funding etc. Some of these (for example item (f.)) require funding outside the scope of TA equipment provisions, for which sources need to be identified. Item (l.) is a longer term possibility for SI and whilst the TA can advise on possible benefits, is a decision outside the TA's scope.

The following specific recommendations and actions are presented for approval by ADB prior to detailed discussion with Executing Agency, MID.

#### **I. Draft action plan**

Based on views developed in conjunction with the Marine Department and the report on the technical visit by IHO, the following is a draft action plan for SIG in relation to resuming hydrographic activities, for structuring MD/SIMSA to take on the role and to manage the transition of hydrographic activity back to the maritime regulator.

Recommendation	Action	Sub tasks	Who to carry out	Timing	Cost implications
SIG/MID formally designate an authority, such as SIMSA, to be responsible for the provision of the national hydrographic service.	Recommendation put to MID	Develop proposal	TA	By end March 2010 (Completed)	Nil; TA activity
		Draft regulations (?)	TA	By end January 2010	Nil; TA activity
	MID advises community	Media release setting out planned change	TA for PS, MID	April 2010	Nil; TA activity
SIMSA establishes unit/staff  {Note: All actions from this point are modified by the SIG reserve on recruitment. The Action Plan will be re-scheduled when recruitment is possible – at this stage estimated as Q2 2011. Effect will be to shift all target dates back by one year...}	Designate a national MSI Coordinator position	Re draft organisation chart	TA	April 2010 (completed)	Nil; TA activity
	Recruit or promote to new positions (a) MSI coordinator and (b) hydrographic surveyor and/or a survey technician.	Draft or amend Position Descriptions	TA	May/June 2010 (completed)	Nil; or recruitment and salary cost to MID if role cannot be filled by existing staff
		Appoint staff	Marine Department	June 2010	
		Training	IHO	June-September 2010	Tuition costs to IHO. Travel costs and accommodation costs (US20k?)
Responsibilities for hydrography transferred to SIMSA	Submission prepared for presentation to Ministers	Develop submission	TA	July 2010	Nil; TA/MID activity
	MOU signed between Ministers	Draft MOU and obtain buy-in and sign-off	TA	July 2010	Nil; TA/MID activity
	Documents transferred		SIMSA	August/September 2010	Nil; administrative only



Recommendation	Action	Sub tasks	Who to carry out	Timing	Cost implications
	Lands and Survey relinquish responsibility for the Bilateral Arrangement between the Solomon Islands Department of Lands and Surveys. Responsibility signed over to MID;	Prepare paperwork to facilitate transfer	TA plus Marine Department	September 2010	Nil; administrative only
		Seek ministerial approval	TA plus Marine Department	March 2010	
		Agreement executed and advice to IHO	Department Lands and Survey, MID and IHO	September 2010	
	Announcement	Gazette change (?) and publicise	SIMSA with TA	September 2010	Possible newspaper advertising (SBD5,000)
SIG to seek associate membership of the South West Pacific Hydrographic Commission (SWPHC).	SIMSA seeks membership	Prepare submission	SIMSA with TA assistance	July 2010	Neutral; costs should be comparable to existing 'observer' status
Establish liaison with the UKHO's Regional Team 5B to	Ensure navigationally significant information is forwarded for inclusion in charts	Letter and follow up to IHO UKHO	SIMSA	September 2010	Nil; Communication only
Acquire equipment	Obtain portable hydrographic surveying equipment	Assess and justify need. Prepare proposal for ADB/MID approval	SIMSA with TA	October 2010	Nil; SIMSA/TA activity
		Seek funding	SIMSA with TA	November - December 2010	
		Purchase or assume	SIMSA	March 2011	USD150,000 (funding to be

Recommendation	Action	Sub tasks	Who to carry out	Timing	Cost implications
		equipment			sought)
		Training	External/IHO	March 2011	USD50,000 estimated
Overseas advisor appointed	Seek adviser to guide and assist in the re-establishment of an in-country hydrographic capability.	Liaise with other hydrographic agencies. Seek funded mentor role	SIMSA	September 2010	Cost may be funded by other agencies. Role only justified if donated funds
Form a national hydrographic consultative committee	Approach stakeholder to form committee	List and contact potential committee members. Develop terms of reference	SIMSA	October 2010	Costs may be incurred to encourage active meetings. Estimated USD4,000 pa
SIG applies for membership of the IHO. (Note: If justified/approved)			SIMSA/MID	2015 (?)	9,000 pa plus costs attending overseas meetings etc.

Costs can be managed depending on the scale of participation. Associate Membership at regional level could be achieved at costs not dissimilar to those already being incurred sending representatives to meetings as observers.

The following table indicates incremental costs that may be incurred as activity levels increase compared to the current situation where SIG is provided observer status at regional IHO meetings only.

Level of involvement	Cost factors	Low-side estimate	High-side estimate
Current – observer status	Observer status requires say two regional visits pa	USD5,000pa	USD10,000pa
Membership of SWPHC	Similar costs to above. Hosting of conference included in high-side estimate	Nil	USD10,000pa
Establish SIHU within SIMSA	Staff costs	Nil	USD30,000pa
	Training	USD20,000	USD20,000
	Equipment (if acquired)	Nil	USD150,000
	Training (equipment specific)	Nil	USD50,000
<b>Summary 1: Cost of recommended action</b>	Establishment cost	Nil	USD150,000
	Training (set-up cost)	USD20,000	USD70,000
	Annual maintenance (meetings etc.)	USD5,000pa	USD20,000pa
<b>Summary 2: Cost of recommended action with external funding for equipment</b>	Establishment cost	Nil	Nil
	Training	USD20,000	USD70,000
	Annual maintenance (meetings etc.)	USD5,000pa	USD20,000pa
Full membership <u>(not recommended for 5 – 10 years)</u>	Annual fees	€9,000	€9,000+
	Establishment (see above)	Nil (external funding for equipmnt)	USD150,000 (acquire equipment)
	Training	USD20,000	USD70,000
	Annual maintenance (meetings etc)	USD10,000	USD40,000

Costs to meet the recommendations below are summarised as set-up costs ranging from USD20,000 to USD150,000, and annual operating costs of USD5,000 to USD20,000. The high-side estimate includes equipment purchase, which is only recommended if funding can be obtained. With no funding, the low side estimate would be valid.

If funding for equipment is found, the estimated set-up costs range from USD20,000 (training) to USD70,000 if equipment specific training must be obtained. Annual operating costs range from USD5,000 to USD20,000, depending on the level of attendance required at meetings and conferences in the region.

#### **J. Recommendations for in principle approval**

The TA recommends that:

- SIG formally agrees to the transfer of responsibility for SI hydrographic services from the Ministry of Land, Housing & Survey, Department of Lands and Survey, to the Ministry of Infrastructure Development, by means of a Memorandum of Understanding signed by Ministers and transfer of the responsibility for the bilateral agreement between SIG and IHO
- SIMSA forms a hydrographic unit within SIMSA. The unit required may comprise two staff but may require less than two additional persons as the lead role may be absorbed within another senior position
- The unit be equipped with survey equipment as suggested above but only if specific funding can be secured. Additional staffing may be required if the unit becomes so equipped. The equipment will be capable of being used in vessels of opportunity
- SIMSA explores all possible avenues for funding and assistance in kind, by training and by mentoring within the region
- SIG will assist and facilitate SIMSA in meeting SIG's obligations under its membership of IHO bodies, including continuing funding of representation at regional meetings, and accepting liability for any outstanding debts incurred in its behalf previous to transfer of responsibility to SIMSA
- After establishment of SIMSA and the SIHU, SIMSA seeks on behalf of SIG associate membership of the regional body SWPHC, (South West Pacific Hydrographic Commission of IHO
- SIG only considers full IHO membership at a later date if justified by developments (such as major economic development or major increase in vessel registry activities, e.g., through a second or supplementary register).