IHO Capacity Building Programme

The State of Hydrography and Nautical Charting in the Republic of Lebanon

February 2014

INTENTIONALLY BLANK

Contents

Contents **3**
Abbreviations **4**
Executive Summary **5**
1. Introduction **7**
2. IHO Technical Visit **7**
3. Assessment of the Previous Technical Visit **8**
4. Lebanon Hydrographic Assessment **9**
4.1 National Hydrographic Awareness *9*
4.2 National Hydrographic Infrastructure *9*
4.3 National Hydrographic Authority *9*
4.4 Maritime Safety Information (MSI) *10*
4.5 Hydrographic Surveying *10*
4.6 Nautical Charting *11*
4.7 Hydrographic Resources *11*
4.8 Additional stakeholders *11*
5. A Way Ahead **11**
5.1 Maritime Safety Information *11*
5.2 National Hydrographic Surveying and Charting *12*
5.3 Bilateral Arrangements for Surveying and Charting *12*
5.4 National Hydrographic Authority *12*
5.5 National Hydrographic Committee *12*
5.6 National Hydrographic Capability Development *13*
6. Technical Visit Conclusions **13**
7. Technical Visit Recommended Actions **14**
Annexes
A-Lebanon Dependency on Hydrography and Charting **17**
B-Technical Visit Programme **20**
C-List of Contacts **22**
D-Structure of the National Hydrographic Service (Department level in the Lebanese Navy) **24**
E-C-55 Input from France **25**
F-Charting Analysis of Lebanon Waters **29**
G-IHO Yearbook Revision **32**

Abbreviations

BA	British Admiralty
CBSC	Capacity Building Sub-Committee
CNRS	National Council for Scientific Research
EEZ	Exclusive Economic Zone
ENC	Electronic Navigational Chart
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
LAF	Lebanese Armed Forces
LN	Lebanese Navy
MBES	Multi-Beam Echo Sounder
MBSHC	Mediterranean and Black Seas Hydrographic Commission
MSI	Maritime Safety Information
NHS	National Hydrographic Service
NHC	National Hydrographic Committee / Navy Hydrographic Committee
TN-ONHO	Turkish Naval Forces- Office of Navigation, Hydrography and
NtMs	Notice to Mariners
PCA	Primary Charting Authority
RHC	Regional Hydrographic Commission
RNC	Raster Navigational Chart
SBES	Single Beam Echo Sounder
SHOM	Hydrographic and Oceanographic Service of the French Navy
SOLAS	[United Nations] Convention for the Safety of Life at Sea
TTW	Territorial Waters
UKHO	United Kingdom Hydrographic Office
UNCLOS	United Nations Convention on the Law of the Sea
WMO	World Meteorological Organization
WWNWS	Worldwide Navigation Warning Service

Executive Summary

A proposal for a technical visit to the Republic of Lebanon was approved by CBSC11 to assess the current status of nautical charting and hydrography in the country and to provide advice to the government and to stakeholders on a way ahead. At the last 18th Mediterranean and Black Seas Hydrographic Commission (MBSHC18) the visiting team was defined to be comprised by Turkey (Lead), France and the International Hydrographic Bureau (IHB).

The Republic of Lebanon has received a previous IHO Technical Visit in 2009. Report of this visit may be viewed on the IHO website at http://www.iho.int/mtg_docs/CB /CBA_TechnicalVisits.htm [accessed 06 Feb 2013].

The Republic of Lebanon has been a member of the International Maritime Organization (IMO) since 1966 and is a signatory to the SOLAS Convention, but is not a member of the International Hydrographic Organization (IHO). It has observer status within the MBSHC. In general there is awareness in Lebanon on the obligations and provisions under SOLAS Chapter V, Regulations 4 and 9 to ensure that appropriate hydrographic and charting services are made available.

The Government of Lebanon, through its various agencies, is aware of the current state of hydrography and nautical charting in Lebanon and the benefits of modern hydrography to economic growth, safety of navigation and protection of the marine environment. Awareness has been heightened at the working level by the visit of the IHO Technical Team.

With the clear support of the Lebanese Government and the Lebanese Armed Forces (LAF), the Lebanese Navy (LN) is the overarching body to coordinate the national hydrographic effort in the country. It assumed main responsibility for national hydrography and nautical cartography development. The IHO Technical Team considers that the LAF-Navy staff in all levels is fully aware of the national responsibility and takes intense pride in its successful delivery. However the LAF-Navy has neither trained hydrographic surveyors nor nautical cartographers.

The Lebanese Government decided in 2011 to join the IHO and the LAF created the Navy Hydrographic Committee (NHC), currently comprising only the LAF-Navy Staff. The National Hydrographic Service (NHS) was also created in 2013 under the LN, with an activation date of 1 February 2014 (not yet activated). The Joint Maritime Chamber and the soon to be created National Committee of Integrated Maritime Policy also deal with hydrographic-related subjects and must be considered.

Lebanon has currently no national capability for nautical chart production. The Hydrographic and Oceanographic Service of the French Navy (SHOM) is the Primary Charting Authority (PCA) for Lebanon. The cartographic production is kept up-to-date but the underlying surveys are generally old. A comprehensive chart updating programme is required so to contribute to a modern maritime and port infrastructure and to allow Lebanon to fulfil its international obligations in accordance with Regulations 4 and 9 of Chapter V of the SOLAS Convention. No formal agreement was identified between Lebanon and the PCA.

The last identified surveys in the country were conducted by SHOM in 2010 and 2011 mainly to address the needs of the Port of Beirut while the remainder areas are not kept updated to modern survey standards. Hydrographic surveying capability however does exist within Lebanon and is managed by the National Council for Scientific Research (CNRS) for scientific purposes with the Scientific Research Boat CANA and cooperation is already in place with the LN. The cooperative use of this hydrographic asset will be useful for both parties.

There is no clearly established Maritime Safety Information (MSI) organization in Lebanon. This means that mariners arriving from overseas are not necessarily aware of new navigationally significant information before they arrive in Lebanon nor do the existing charts contain the latest navigationally significant information. The Directorate General of Land and Maritime Transport currently sends MSI to UKHO, as they are not aware of the PCA. The LAF-Navy has not so far established a National Point of Contact to liaise with the NAVAREA III Coordinator. MSI training should be considered at a high priority in order to be the fundamental step to start the work of the NHS.

It was evident to the visiting team that Lebanon already possesses hydrographic capability, awareness and willingness, and the effective cooperation and coordination of the national activities will prove a positive step towards the establishment of a formal National Hydrographic Service that will help Lebanon to build a solid maritime infrastructure to support the safety of navigation and the economic growth.

REPORT

1. Introduction

The International Hydrographic Organization (IHO) is an intergovernmental international organization, currently comprising of 82 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 United Nations recognizes the IHO as the competent authority for hydrography and nautical charting. The International Hydrographic Bureau (IHB), based in Monaco, is the secretariat of the IHO. The Republic of Lebanon is not currently a member of IHO.

The IHO has encouraged the establishment of Regional Hydrographic Commissions (RHCs) to coordinate hydrographic activity and cooperation at the regional level. The RHCs are made up predominantly of IHO Member States; however, other regional States also participate as Associate Members. RHCs are not formal bodies of the IHO, but work in close cooperation with the Organization to help further achieve its goals and programs. RHCs meet at regular intervals to solve mutual hydrographic and chart production problems, plan joint survey operations, and resolve schemes for INTernational Chart coverage in their regions. Non-Member States may participate as RHC Associate Members or Observer as it is currently the case of Lebanon in the MBSHC.

This report has been written with the express intention of assisting the Government of Lebanon to strengthen and develop its hydrographic capability to meet its current and future needs and its international maritime obligations under the UN Convention for the Safety of Life at Sea (SOLAS). The report comprises a description of the visit, major conclusions and a number of recommended actions for consideration by the relevant organizations.

The report is supported by various Annexes providing detailed information including the dependence on hydrography and nautical charting of various sectors in Lebanon, an analysis of the current survey state, an analysis of the existing charting situation and surveys, and recommendations for the strengthening of national hydrography in the Republic of Lebanon.

2. IHO Technical Visit

A proposal for a technical visit to the Republic of Lebanon was approved by CBSC11 to assess the current status of nautical charting and hydrography in the country and to provide advice to the government and to stakeholders on a way ahead. At the last 18th Mediterranean and Black Seas Hydrographic Commission (MBSHC18) the visiting team was defined to be comprised by Turkey (Lead), France and the International Hydrographic Bureau (IHB).

Burak İNAN from Turkey, Henri DOLOU from France and Alberto COSTA NEVES from the IHB carried out a hydrographic awareness and technical assessment visit to the Republic of Lebanon between 4-6 February 2014.

The IHO Team first called on the Chief of the Lebanese Navy, Admiral Nazih JBAILY. The main meetings were held at the Beirut Naval Base where the members of the Navy Hydrographic Committee (NHC) had assembled.

The meetings enabled the IHO Technical Team to build up a picture of the conspicuous features of the hydrographic activities. The meetings also facilitated the appreciation of data available and data sharing amongst the national representatives. It was clear to the visiting team that all the Navy Staff involved in the establishment of the National Hydrographic Service (NHS) was well prepared for the meetings and able to actively interact with the team.

This resulting report has been written with the express intention of assisting the Government of Lebanon to develop and strengthen its hydrographic capability to meet its current and future needs and also its international maritime obligations under the SOLAS Convention. The report comprises a description of the visit, a brief assessment of the current situation and an analysis of the nation's hydrographic needs, major conclusions and a number of recommended actions for consideration by the relevant authorities.

Annex A contains a general description of Lebanon and its geography and infrastructure. Annex B to this report presents the Technical Visit Programme jointly prepared for the visit by the visiting team and the LN. Annex C describes the points of contact of the organizations visited and considered during the period.

3. Assessment of the Previous Technical Visit

The Republic of Lebanon received a previous IHO Technical Visit in 2009. The Report of this visit may be viewed on the IHO website at http://www.iho.int/mtg_docs/CB /CBA_TechnicalVisits.htm [accessed 06 Feb 2013]. The report generated from this visit has been consulted in the preparation of this report.

Recommendations that have been made following previous technical visit to Lebanon are summarized under the key headings below with an assessment of progress made with each item.

- **National Hydrographic Committee**: The visiting team recommended the creation of a National Hydrographic Committee reporting to the Prime Minister. Currently, a Navy Hydrographic Committee and a Joint Maritime Chamber has been formed in Lebanon. A draft National Committee of Integrated Maritime Policy is ready to be signed for all relevant parties.
- **Lebanon and IHO membership:** The Lebanese Government decided to join the IHO in 2011. The LAF created a Hydrographic Service in the Lebanese Navy, and the Navy established a Hydrographic Committee for all follow-up subjects related to Hydrography. The Navy Hydrographic Committee was informed about the application procedure and an example of a letter to accede to the Convention on the IHO was provided.
- **Bilateral Cooperation:** The report recommended that a bilateral agreement be signed between France and Lebanon, fixing the responsibilities of the two signatory parties within the framework of SOLAS, and setting objectives in terms of cooperation, assistance and advice, on the understanding that financing would be found outside of SHOM. A bilateral agreement has not been signed yet but negotiations are underway with France and Turkey.
- **Maritime Safety Information (MSI):** Lebanon was encouraged to develop an effective maritime safety information system but it was identified that the information flow was still ineffective and the authorities were still in general confused regarding MSI issues. Lebanese Navy will take the necessary steps to be the "Principal Point of Contact with the NAVAREA III Coordinator" and to establish a procedure and an effective way of updating charts and nautical documents.
- **Updating of nautical charts in SHOM's portfolio:** The shortcomings of the present charts are due to the age of the surveys and to the inaccurate depiction of the coastline. Since the last visit SHOM conducted two surveys with the Hydrographic Ship Beautemps-Beaupré in 2010 and 2011 to update the charts of the Port of Beirut.
- **Training:** There has been no improvement in training since the last technical visit. Navy Hydrographic Committee was informed of all training opportunities approve by the CBSC and all the training requirements added to the MBSHC Five-Year CB Plan.

- **Hydrographic Surveys:** Besides the surveys conducted by the Beautemps-Beaupré, the CNRS Scientific Research Boat CANA was equipped with a multi-beam echo sounder and a full suite of supporting equipment, and currently has the capability of doing hydrographic surveys. The approaches to Beirut Harbour and the port have been surveyed by CANA in 2013. The Lebanese Navy did not profit from this survey due to the lack of expertise.

4. Lebanon Hydrographic Assessment

The following is a general assessment of the situation in Lebanon regarding hydrography and nautical charting services.

4.1 National Hydrographic Awareness

In general there is awareness in Lebanon of the obligations and provisions under SOLAS Chapter V Regulations 4 and 9 to ensure that appropriate hydrographic and charting services are made available. Lebanon has been a member of IMO since 1966, is a signatory to the SOLAS Convention, but is not a member of the IHO. It has Observer status within the IHO and the MBSHC.

The Government of Lebanon, through its various agencies, is aware of the current state of hydrography and nautical charting in Lebanon and the benefits of modern hydrography to economic growth, safety of navigation and protection of the marine environment. Awareness was one of the key tasks of the IHO Technical Visiting Team.

4.2 National Hydrographic Infrastructure

Five agencies within Lebanon have responsibility for or participate in hydrographic matters: Ministry of Public Works and Transport - Directorate General of Land and Maritime Transport, Directorate of Geographic Affairs - Lebanese Army, Lebanese Navy, the National Council for Scientific Research (CNRS) and the Ministry of Environment.

The Ministry of Public Works and Transport Directorate General of Land and Maritime Transport has responsibility for Maritime Affairs and implementation of all Maritime Conventions ratified by the Republic of Lebanon. It is a regulatory body and responsible for maintenance and improvement of marine navigational aids in ports and coast. It has no hydrographic capability. It is the principal point of contact with the IHO.

The Directorate of Geographic Affairs - Lebanese Army is responsible for land mapping in the country. It has all the necessary staff and equipment and ready to provide all the land data and the printing facilities needed for the nautical charting.

With the clear support of the Lebanese Armed Forces (the Lebanese Army), the Lebanese Navy is the overarching body to coordinate the national hydrographic efforts. It assumed main responsibility for national hydrography and nautical cartography. The National Hydrographic Service was officially established under the Lebanese Navy in 1 Feb 2014 but has not been activated to date. NHS's draft organizational structure should allow to handle the phase 1 (MSI), phase 2 (Surveying) and phase 3 (Nautical charting). The positions of NHS Organigram (Annex D) are not currently filled with staff.

CNRS is a public institution established in 1962 and assigned with the task of formulating national science and technology policy, initiating, guiding, supporting and conducting scientific research programmes and activities in Lebanon. CNRS manages and runs the Centre for Marine Sciences and it is the operator of the scientific research vessel CANA which was previously a fishing boat, renovated and converted into a scientific vessel particularly specialized in marine and environmental research in light of the high priority of the project for the study and the safeguard of the Lebanese marine ecosystem presented by CNRS.

4.3 National Hydrographic Authority

The IHO recommends that every coastal State should designate a National Hydrographic Authority responsible for coordinating hydrography and charting in the country. The role of the National

Hydrographic Authority is to be the principal national and international point of contact and to act on behalf of the government to ensure that the State meets its international obligations to make proper MSI and nautical charting services available to mariners. The National Hydrography Authority is the first point of contact for in-country stakeholders and for maintaining relations with relevant international organisations. In the case of the Republic of Lebanon, these contacts would include the IHO, MBSHC, the PCA and other countries and agencies that might support hydrographic development and assistance in Lebanon.

The NHS within the LAF-Navy seems to be the most appropriate body to be the National Hydrographic Authority. Such an arrangement is similar to that adopted in many other maritime states. The LAF-Navy must seek a formal arrangement in order to establish a national legal framework by means of a law, decree or equivalent.

4.4 Maritime Safety Information (MSI)

There is no clearly established MSI infrastructure that coordinates its activities with the Worldwide Navigation Warning Service (WWNWS) implemented globally by the IMO, WMO and IHO. The Ministry of Public Works and Transport, Directorate General of Land and Maritime Transport represents itself as the primary MSI authority in Lebanon. Nevertheless, the maritime safety information is not sent to PCA. Directorate General of Land and Maritime Transport has an informal arrangement with UKHO to inform their MSI (not the national MSI).

It was clear to the IHO Technical Team that there was general lack of understanding and coordination of MSI affairs under the SOLAS obligations.

The four paper charts and six ENCs of Lebanon published by the PCA (SHOM) have not been subject to regular NtMs. Currently there is no liaison between the Directorate General of Land and Maritime Transport and the PCA. It is necessary to establish a formal routine flow of MSI to the PCA if charts are to be maintained to the standards required for safety of navigation.

The Technical Team recommended the definition of a focal point of contact for MSI is an urgent issue and that Lebanon may benefit from valuable MSI training opportunities of the IHO Capacity Work Programme.

4.5 Hydrographic Surveying

The Lebanese waters have not been surveyed to modern standards except for the survey of the coastline, a survey carried out in 2003 and the Beirut Port Approach survey done by France in 2010 and 2011, of which data was provided to the Lebanese Navy.

CRNS has been conducting multi-beam echo sounder surveys in support of scientific and environmental activities in coastal areas by scientific research vessel CANA. The latest scientific survey was done in 2013. While not achieving the IHO S-44 standards of survey accuracy, much of the data is most likely useful for hydrographic matters. Currently, there is no formal mechanism in place to ensure that this data is brought to the attention of and made available to the stakeholders, especially to the Lebanese Navy.

The current state of surveys as summarized in IHO Publication C-55 "Status of Hydrographic Surveying and Nautical Charting Worldwide" (updated by SHOM in 16 January 2014) is in the table below:

Survey Coverage	**A**	**B**	**C**
Depths < 200m	6	15	79
Depths > 200m	7	0	93

A= percentage which is adequately surveyed.
B= percentage which requires re-survey at larger scale or to modern standards.

C= percentage which has never been systematically surveyed.

Annex E presents the complete table of C-55 related information as organized by SHOM.

4.6 Nautical Charting

Lebanon has no national capability for nautical chart or publication production at this stage. The Lebanese coasts are currently covered by four French charts belonging to the international portfolio, four British charts and nine ENCs which are carried out by France (7), United Kingdom (1) and Turkey (1). The existing charts published and maintained by the SHOM, UKHO and ONHO do not necessarily contain the latest navigationally significant information. The data from which the charts are compiled is noted as being in many cases old, imperfect and with undefined reference systems.

Annex E presents the summary of the cartographic information (C-55) and Annex F the analysis of the charts of the Lebanese Waters.

4.7 Hydrographic Resources

The government of Lebanon has neither trained hydrographer nor nautical cartographer. No tide gauge installed in the country yet. Two hydrographic resources are listed below.

a) National Council for Scientific Research (CNRS): CNRS operates scientific research ship CANA equipped with Kongsberg EM 710 Multi-beam Echo Sounder System with the full suite of supporting devices. In addition to that CNRS has the archive of raw survey data previously done by CANA.

b) Hydrographic and Oceanographic Service of the French Navy: SHOM has the survey data for Lebanese waters.

4.8 Additional stakeholders

The Ministry of Environment was identified as a very important stakeholder in Lebanon due to its activities dealing with the oil spill and the waste management. This Ministry is responsible for the marine protected areas and sensitivity maps for oil.

5. A Way Ahead

5.1 Maritime Safety Information

Maritime Safety Information (MSI) is considered by the IHO as the first phase in hydrographic capacity building and whilst the IHO Technical Team could see that progress has been made in this area it has concerns that the national MSI system is not functioning efficiently.

The IHO recommends that every coastal State should designate a national MSI coordinator. It is recommended that the Directorate General of Land and Maritime Transport and the Lebanese Navy find an agreement to establish the National MSI Coordinator due to their roles in Maritime activities. It is also recommended that a deck officer or naval officer with seagoing experience be nominated for this role. In addition it is essential that the national MSI coordinator has a deputy to gain the necessary experience to act as the national MSI coordinator during the post holder’s absence and to assume the post in due course. Both officers will require the necessary training which is frequently provided under IHO CB training activities. To assist in this the MBSHC CB Coordinator should submit the MSI training requirement of Lebanon in the next CBSC meeting.

However, as all hydrographic and maritime stakeholders have an interest in and input to MSI such training as is given should be extended to this group such that there is an awareness of what is MSI, how it is disseminated and what their role is in this process.

The IHO Technical Team strongly recommends that a formal working relationship should be established between the NAVAREA III coordinator in Spain and the national MSI coordinator. This

relationship should include regular contacts. In this way the NAVAREA III coordinator knows that the link is being maintained and is aware of the situation in Lebanon.

The following contact information refers to the Navarea III Coordinator:

NAVAREA Contact Information:
Address: Director del Instituto Hidrográfico de la Marina
Instituto Hidrográfico de la Marina
Plaza San Severiano, 3
11007 Cádiz
Spain

Contact details:
Representative of NAVAREA III Coordinator:
Head of Navigational Section
Tel: / +34 956 59 93 99 / +34 956 59 94 09
avisosihm@fn.mde.es
ihmesp@fn.mde.es

5.2 National Hydrographic Surveying and Charting

The Republic of Lebanon has extensive hydrographic surveying needs. Surveys are inadequate and not done to modern standards. The existing charts published and maintained do not necessarily contain the latest navigationally significant information. The data from which the charts are compiled is noted as being in many cases old, out-dated and on undefined reference systems. To assist in this the IHO Technical Team recommended that the Lebanese Navy to establish a Charting Plan and a Priority Survey Plan. LAF-NAVY may seed assistance of a well-established Hydrographic Service through a bilateral agreement as an interim solution until the in-house survey and charting capacity is available.

5.3 Bilateral Arrangements for Surveying and Charting

Bilateral agreements with established hydrographic services are a valuable means of fulfilling SOLAS obligations for countries with a limited and or developing hydrographic capability. Lebanon's charts are currently produced and published by SHOM and UKHO but the visiting team could not identify any formal arrangement. It is recommended to Lebanon to formally designate the PCA and to establish a formal bilateral agreement as an interim solution until the in-house chart production is established.

5.4 National Hydrographic Authority

In Lebanon the Directorate General of Land and Maritime Transport is the lead authority for maritime safety and the recognized point of contact for the IHO. Nonetheless it was clear to the IHO Technical Team that the Lebanese Navy has the support of the LAF as the hydrographic authority. So it is recommended that the Lebanese Navy or the NHS should be formally nominated as the National Hydrographic Authority.

To ensure the effective operation of this authority it should be activated immediately and the authority of the NHS should be strengthened within the Lebanese government structure. The visiting team also recommends to the LAF-Navy to liaise with the Ministry of Foreign Affairs to officially notify the IHO of this appointment through diplomatic channels.

5.5 National Hydrographic Committee

It was evident to the visiting team that Lebanon already possesses hydrographic capability, awareness and willingness, and the effective cooperation and coordination of the national activities will prove a positive step towards the establishment of a formal National Hydrographic Service that will help

Lebanon to build a solid maritime infrastructure to support the safety of navigation and the economic growth.

To coordinate hydrographic effort for the effective fulfilness of SOLAS responsibilities and the efficient management of a State's maritime area the IHO recommends the establishment of a National Hydrographic Committee to provide input to and coordination of the hydrographic programme and setting national charting and surveying priorities. In this way, the stakeholders are in a position to assist in the continuing maintenance of the charts, longer term planning and perhaps also to the programme budget. Lebanon has currently no established National Hydrographic Committee (NHC), but the existence of Navy Hydrographic Committee, the Joint Maritime Chamber and efforts to sign the National Committee of Integrated Maritime Policy are good developments to establish a National Hydrographic Committee.

All hydrographic stakeholders need to be involved in contributing to Lebanon national hydrographic programme. This is not only to identify and prioritise national requirements, but also to contribute to the execution of the programme. This could be through help in-kind, such as the provision of boats, or personnel or through contributions to enlist contract support – for example for surveys of areas targeted for development. A key role for the stakeholders is to educate and encourage everyone to forward all relevant new or changed hydrographic information to the national coordinator for hydrography and charting.

The need for coordination of the national hydrographic effort was clearly demonstrated to the IHO Technical Team. It is recommended that the regular meetings of the stakeholders are held as allowed for in its terms of reference to make best use of Lebanon’s valuable hydrographic assets.

5.6 National Hydrographic Capability Development

Lebanon has significant national hydrographic resources but lacks a coordinated approach to developing its staff and gaining the best from the equipment available. It is strongly recommended that the NHS review this situation and propose first a coordinated plan to obtain a Category B hydrographic surveyor in order to gain the necessary professional experience. Secondly that the NHS proposes financial means whereby this training can be achieved. In addition it is recommended that, at least in the short term, all trained hydrographic staff is considered as a national resource pool and engage in survey operations that are taking place within the country – government and commercial – to ensure that their professional development is maintained.

There are limited opportunities for international hydrographic training. A list of courses is contained in IHO publication C-47 - *Training Courses in Hydrography and Nautical Cartography*, freely available from the IHO website. The list of the FIG/IHO/ICA recognized programmes in Hydrography and Nautical Cartography can be found in the IHO website under "Capacity Building". Short courses in the fundamentals of hydrographic data gathering are available through the IHO Capacity Building Programme and should be considered by Lebanon with the MBSHC CB Coordinator support.

An additional source of capacity building is to include clauses in commercial survey contracts in the country to include capacity building. This can be achieved by amending national regulations that control surveys in the national territorial waters and the EEZ.

6. Technical Visit Conclusions

Based on discussions and the facts obtained, the following principal conclusions have been reached:

(1) There is generally good awareness of national hydrography in Lebanon and a desire to improve it.

(2) The Lebanese Navy is potentially the most effective means of improving awareness of hydrography within government and at national level. In the near future it is expected from NHS to take the main responsibility as the National Hydrographic Authority.

(3) An effective MSI service needs to be put in place in order to support the safety of navigation, the safety of life at sea and the protection of the marine environment.

(4) The charts covering Lebanon could be improved with data held in Lebanon in addition to the needs to be identified by the Survey Priority Plan.

(5) The establishment of the National Hydrographic Committee can provide the framework to enhance cooperation amongst the various stakeholders.

(6) The Lebanese government and in particular the Lebanese Navy have committed significant resources to the establishment and maintenance of the NHS for the safety of navigation in Lebanon's waters and the economic development and the marine environmental protection of the nation.

(7) CNRS has a well manned, maintained and equipped survey vessel (CANA) capable of meeting all of the nation's hydrographic immediate requirements. CNRS and NHS should co-operate to use research vessel CANA and to develop the necessary hydrographic capability.

(8) A capacity building plan is necessary in order to provide the human resources to the operation of the NHS and achieve the goals envisioned by the LN.

(9) Lebanon does not produce or maintain its paper charts and ENCs and established the goal to create this capacity in the next five years.

(10) NHS is going through a period of staff and equipment change which will need careful handling to allow the organization to maintain its output and prepare for the future.

7. Technical Visit Recommended Actions

(1) LAF-Navy to establish the structure of the National Hydrographic Service as simple as possible to meet the requirements for the collection and circulation of nautical information, necessary to maintain existing charts and publications up to date. This is the phase 1 of the capacity building and should be done as an immediate action,

(2) LAF-Navy to ensure that a Maritime Safety Information (MSI) Coordinator is nominated as soon as possible to fulfill the national obligation under SOLAS V/4 on navigational warnings,

(3) NHS to notify the MBSHC Chair the relevant contact information about the national coordinator for MSI,

(4) MBSHC Chair to inform the NAVAREA III Coordinator the relevant contact information of the Lebanese national coordinator for MSI,

(5) NHS to establish the necessary workflow with the NAVAREA III coordinator and assure a permanent flow of information,

(6) Directorate General of Land and Maritime Transport to establish a formal agreement with NHS and submit the relevant MSI to the National MSI Coordinator,

(7) NHS to develop a National Maritime Safety Information Plan as a matter of priority and ensure its execution,

(8) NHS to establish an MSI page on its website to publish the relevant MSI and Notices to Mariners (NtMs),

(9) NHS to liaise with the PCA and other chart production nations to ensure that new navigationally significant information is forwarded and included in existing charts of Lebanon;

(10) LAF-NAVY to prepare the structure of the National Hydrographic Service for the creation of a survey capability to conduct coastal and offshore projects, maintain adequate aids to navigation and to set up hydrographic databases. This is phase 2 of the Capacity Building,

(11) NHS to establish a formal agreement with CNRS in order to employ the Scientific Research Boat CANA for hydrographic surveys, including the establishment of procedures to allow data acquisition to modern standards, acquisition of software and hardware, and the use of past survey data,

(12) NHS to establish a programme for the revision of all the published charts of Lebanon and a priority programme for the surveys, and keep the chart producers informed,

(13) NHS to create a national programme to encourage all mariners and other interested parties to report discrepancies on existing charts,

(14) LAF-NAVY to prepare the structure of the National Hydrographic Service for the creation of a cartographic capability to produce paper charts, Electronic Navigational Chars (ENCs) and publications independently, or alternatively by means of bilateral agreements. This is phase 3 of Capacity Building,

(15) NHS to coordinate and cooperate with Directorate of Geographic Affairs of the Lebanese Army to make available the latest topographical maps in appropriate scale which covers the coastline of Lebanon,

(16) Directorate of Geographic Affairs of the Lebanese Army to assess the requirement of NHS and define priority survey of the topographical maps in appropriate scale which covers the coastline of Lebanon in order to contribute to the update of nautical charts,

(17) NHS to coordinate the establishment of a network of tide gauges in the main ports and relevant areas,

(18) LAF-NAVY to seek the establishment of National Hydrographic Committee at the Government level and constantly engage with the relevant stakeholders in order to coordinate the hydrographic activities in a national level while contributing to the high level awareness,

(19) LAF-NAVY to conduct a survey to identify all the relevant stakeholders that could potentially be part of the NHC and those that can be beneficiaries of the hydrographic services and products,

(20) LAF to propose to the Government of Lebanon that the National Hydrographic Service be formally and legally constituted as the National Hydrographic Authority (NHA),

(21) LAF-NAVY to liaise with the foreign affairs Ministry of the Government of Lebanon to send a letter to Government of Monaco to accede to the Convention on the IHO,

(22) LAF-NAVY to liaise with the foreign affairs Ministry of the Government of Lebanon to send an notification to the IHB informing the official point of contact in Lebanon. The proposed updated information for the IHO Yearbook is provided at Annex G,

(23) LAF-NAVY to allocate regular funding and travel support for the NHS to fulfill the duties of the Service and to represent Lebanon in appropriate forums, and in particular, to attend relevant meetings of the MBSHC and IHO,

(24) NHS to apply to the MBSHC for the short term assistance of an established hydrographic service to develop the national hydrographic infrastructure for Lebanon and the participation in a MSI course in 2015,

(25) NHS to develop and monitor a coordinated training plan such that staff of the hydrographic service can gain the necessary training and professional experience,

(26) MBSHC CB coordinator to inform NHS regarding the CB training opportunities in the region and elsewhere,

(27) LAF-NAVY to profit from the training opportunities as approved in the IHO CB Work Programme, especially those related to phase 1,

(28) NHS to request that national hydrographic services with staff experienced in MBES methods be invited to Lebanon to review survey practices,

(29) LAF-NAVY to allocate regular funding for the NHS to get relevant charting and surveying systems and software,

(30) NHS to establish a formal bilateral agreement with a well-established Hydrographic Service to be the PCA as an interim solution until the in-house chart production is established,

(31) LAF-NAVY to make use of the IHO Publication M-2 (The Need for National Hydrographic Services) for raising awareness throughout the country.

(32) NHC to address the representation of the natural reserves on all relevant nautical charts for the efficient management and protection of these reserves.

Lebanon Dependency on Hydrography and Charting

1. Introduction[1]

The coast of Lebanon is about 255 kilometres in length. The country is bordering the Mediterranean Sea, between Israel and Syria. Beirut is the largest city, main port and the capital of Lebanon. It is also the economic and administrative centre. There are 6 governorates: Beqaa, Beyrouth (Beirut), Liban-Nord, Liban-Sud, Mont-Liban, Nabatiye. Two new governorates - Aakkar and Baalbek-Hermel - have been legislated but not yet implemented. Nahr el Litani is the only major river in Near East not crossing an international boundary.

The Republic of Lebanon

The 1975-90 civil war seriously damaged Lebanon's economic infrastructure and poses a challenge for the growth of the economy

2. Ports and Harbours

The Port of Beirut is the main port in Lebanon located on the eastern part of the Saint George Bay on Beirut's northern Mediterranean coast, west of the Beirut River. It is one of the largest and busiest ports on the Eastern Mediterranean. The Port of Beirut is the main port of entry into the country[2]. The Port of Beirut is located at latitude of 35° 15'N and longitude of 35° 57' E. During the mid 70's, the Port of Beirut was an important international trading station with the surrounding Arab countries and up until today it has preserved its commercial nature[3]. Beirut dry cargo port offers deep water quays and entrance channels, with a maximum draft of 13 meters and 16 meters respectively. Vessels up to 60,000 DWT can be received and up to 25 ships can be accommodated at a time. Beirut port is equipped with grain capacity: 120.000 tons and warehouses, and the port company inaugurated in 2000 the new Port and Customs Administration Complex[4]. Approximately 3 thousand ships are using Beirut Port[5] every year.

[1] https://www.cia.gov/library/publications/the-world-factbook/geos/le.html [Accessed 25 Feb 14]

[2] http://en.wikipedia.org/wiki/Port_of_Beirut [Accessed 25 Feb 14]

[3] http://www.portdebeyrouth.com/index.php/en/ [Accessed 25 Feb 14]

[4] http://lebanesemarineagency.webs.com/localports.htm [Accessed 25 Feb 14]

[5] http://www.portdebeyrouth.com/index.php/en/component/k2/item/25-keypoints [Accessed 25 Feb 14]

Port of Beirut[6]

The Port of Tripoli is the second major port in Lebanon. The port covers an approximate area of 3 square kilometers, with a water area of 2.2 square kilometers, and the land area composing of 320,000 square meters, and a 420,000 square meters dump area adjacent to the current port, reserved for the future Container Terminal and Free Market Zone[7].

3. Cruise Ship Operations

There is almost no cruise ship activity in Lebanon.

4. Offshore Oil and Gas

Lebanon currently imports all of the oil it consumes, approximately 101,000 bbl/d of oil. Lebanon is currently not an oil producing country. Recent seismic surveys indicated the potential for oil production in Lebanese waters.

As a result of its geographic location, Lebanon was once a refinery center for crude oil that was exported from Iraq and Saudi Arabia by pipelines to two Lebanese coastal refineries, Zahrani in the south, and Tripoli in the north. However, the civil war led to the closure of these refineries.

5. Maritime Claims

Lebanon claims a 12 mile territorial sea, has an exclusive economic zone (EEZ) area of approximately 19,196 square kilometres and a Continental Shelf area of approximately 1,021 square kilometres. Lebanon ratified the United Nations Convention on the Law of the Sea (UNCLOS) in 5 January 1995[8].

There is a maritime border dispute between Lebanon and Israel with an area of 850 square kilometres.

6. Defence including Coastguard

The Lebanon Navy has 11 patrol boats and 3 fast intercept in its inventory. The Navy enforces the law and the State authority in Lebanese Territorial Waters. The Navy also organizes the traffic of commercial ships through the joint naval operations room. The Lebanon Navy assists ministries and agencies in their duties at sea like fire fighting, marine pollution response, search and rescue operations, protecting natural resources and national interests along the coast[9].

---

6 http://www.portdebeyrouth.com/index.php/en/component/k2/item/25-keypoints [Accessed 25 Feb 14]

7 http://en.wikipedia.org/wiki/Port_of_Tripoli_%28Lebanon%29 [Accessed 25 Feb 14]

8 http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm#The%20United%20Nations%20Convention%20on%20the%20Law%20of%20the%20Sea [Accessed 26 Feb 14]

9 http://www.lebarmy.gov.lb/en/structure/?200

7. Sea Fishery

The industrial sector is considered the most developed sector on the coast of North Lebanon and it is the main contributor to the coastal economic activity. It provided almost 57.5% of the northern coast partial GDP in 2005.

The national fish production (4.614 tons; Fish stat 2006-2008) is not enough for the local demand and Lebanon imports many fishery and aquaculture products.

8. Marine Reserves[10]

The Lebanese coastline extends over 255 km in length. The coastal area, which constitutes around 8% of the total area of the country, comprises 33 % of the total built-up area in the country and hosts 55% of the total population (Dar Al-Hadassah & Iaurif, 2003). The Lebanese coastal area is part of the Mediterranean region that is considered a global biodiversity hotspot. It supports an amazing diversity and abundance of marine life and human activities, contributing to the Lebanese economy and offering enormous potential for future economic, social and cultural benefits.

The current marine reserves are listed below:

Palm Islands Nature Reserve (PINR): The PINR was established through Law no. 121 of 9/3/1992; it includes three islands: Palm, Sanani and Ramkin.

Tyre Coast Nature Reserve (TCNR): The TCNR was established by Law no. 708 dated November 5, 1998. The law states that a committee established through a decision from the Minister of Environment for a period of five years

9. Tourism and Coastal Recreational Amenities

Lebanon has a natural attractive seashore with about 300 days of sunshine a year, making it a favourable destination for leisure and activities that expand in different parts of the country. .

10. Education and Science

There do not appear to be any educational or scientific programmes sponsored by Lebanon government requiring or including the gathering of hydrographic data.

11. Planned Maritime Developments in Lebanon Waters

There do not appear to be any significant maritime developments in Lebanon waters

[10] Lebanon's Marine Protected Area Strategy - Supporting the management of important marine habitats and species in Lebanon

Technical Visit Programme

DATE	VENUE	TIME	ACTIVITY	ACTORS
Monday 03 Feb 2014	Beirut Air Port	15.50 23.20	Arrival in Beirut Air Port	Henri DOLOU Alberto P. COSTA NEVES Burak İNAN
Tuesday 04 Feb 2014	Beirut Naval Base	09.00-09.30	Meeting with the Chief of Navy	Radm. Nazıh JBEILI, IHO Technical Team
	Beirut Naval Base Meeting Room	09.30-13.00	-Meeting with the Navy Hydrographic Committee -Overview of Activities -Review of the Preceding - Review of the Hydrographic activities at Lebanese Navy	Navy Hydrographic Committee, IHO Technical Team
	Officer's Club Meeting Room	15.00-17.00		
Wednesday 05 Feb 2014	Ministry of Public Works & Transport Directorate General of Land & Maritime Transport	08.30-09.35	Meeting with the Director of Directorate General of Land & Maritime Transport	Director Abdel Hafeez KAYSSI, Staff from Navy Hydrographic Committee, IHO Technical Team
	Beirut Naval Base	10.00-11.45	Visit to Scientific Research Boat CANA	Dr.Alexandre SURSOCK Staff from Navy Hydrographic Committee, IHO Technical Team
	Port of Beirut	12.00-12.30	-Visit to Beirut Port Authority -Review of the Activities	Beirut Port Control Operator, Staff from Navy Hydrographic Committee, IHO Technical Team
	Lebanese Army Directorate of Geographic Affairs	13.00-14.00	-Visit to Directorate of Geographic Affairs -Review of the Activities -Review of the Capabilities	General Nazareth KAPRİELİAN and His Staff, Staff from Navy Hydrographic Committee, IHO Technical Team

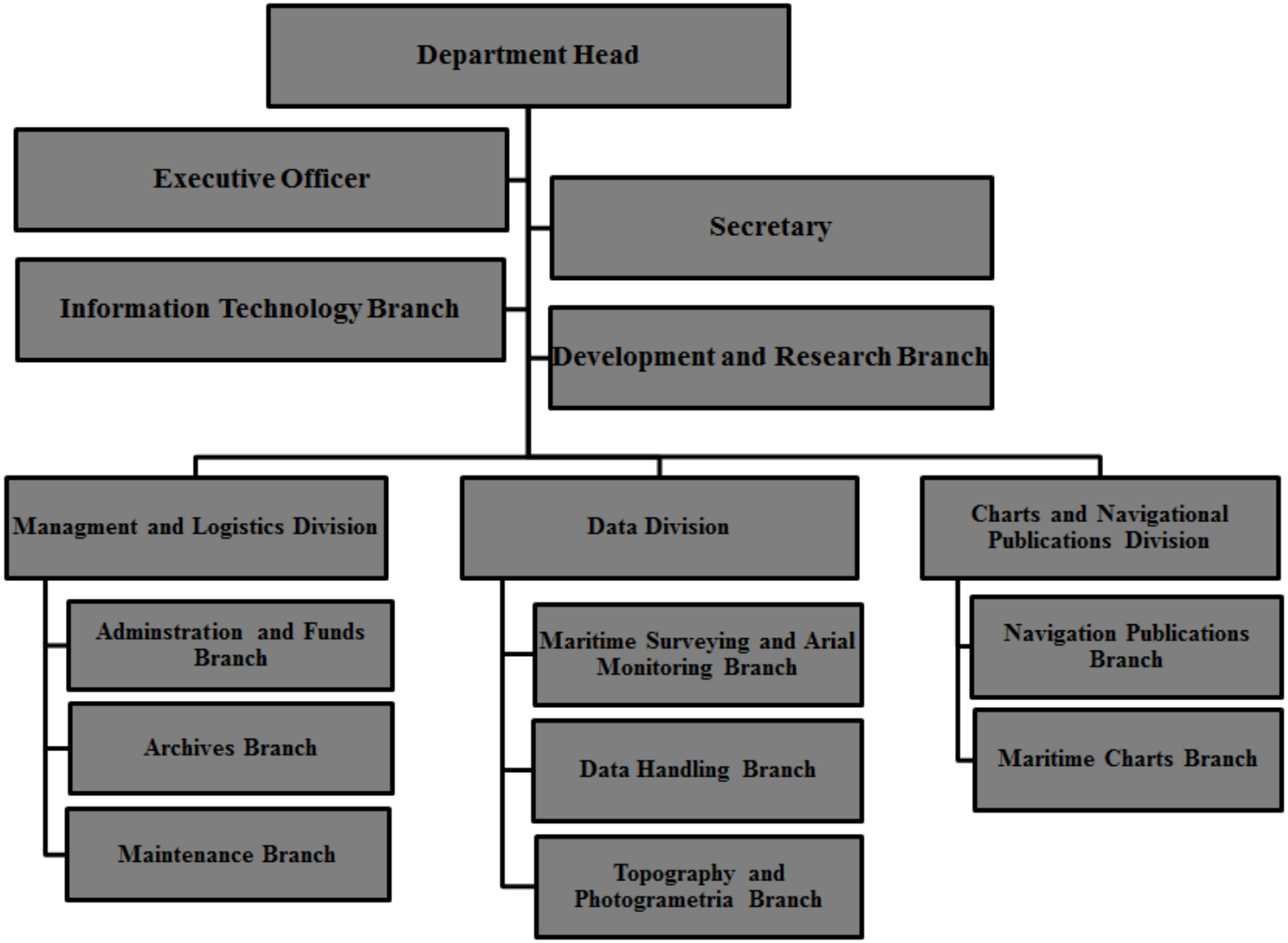
DATE	VENUE	TIME	ACTIVITY	ACTORS
Thursday 06 Feb 2014	Ministry of Environment	08.30-09.40	-Visit to Ministry of Environment -Review of the Environmental Issues	Mr. Georges Berbari, Staff from Navy Hydrographic Committee, IHO Technical Team
	Beirut Naval Base Meeting Room	10.15-13.00	- Review of Technical Visit -Final Assessment - Review of Preliminary Recommendations	Navy Hydrographic Committee, IHO Technical Team
	Beirut Naval Base	13.00-14.00	Meeting with the Chief of Navy - Review of Technical Visit	Radm. Nazıh JBEILI, IHO Technical Team
Thursday 07 Feb 2014	Beirut Air Port	07.00	Departure from Beirut Air Port	Alberto P. COSTA NEVES Burak İNAN
		07.50		Henri DOLOU

List of Contacts

Name	**Organization**	**Telephone** **Mobile or Fax**	**Postal Address** **Email Address**
RAdm. Nazıh JBEILI	Lebanese Navy Chief of Navy		Navy@army.gov.lb
RAdm. Joseph WAKIM	Lebanese Navy (N3) Naval Hydrographic Committee		Navy@army.gov.lb
RAdm. Nicolas Gebrayel Raaydi	Lebanese Navy (N1)		Navy@army.gov.lb
Capt. Joseph GORAYEB	Lebanese Navy (N4)		Navy@army.gov.lb
Cdr. Ziad ALLAM	Lebanese Navy Naval Hydrographic Committee		Navy@army.gov.lb
Cdr. Mazen BASBOUS	Lebanese Navy Naval Hydrographic Committee		Navy@army.gov.lb
Cdr. Mustapha EL ALY	Lebanese Navy Naval Hydrographic Committee		Navy@army.gov.lb
Lt. Giscard SAAD	Lebanese Navy Naval Hydrographic Committee		Navy@army.gov.lb
Lt.Col. Fouad ZEBYAN	Lebanese Army		Navy@army.gov.lb
Lt.Col. Fady NASSERDİNE	Lebanese Army		Navy@army.gov.lb
Gen. Nazareth KAPRİELİAN	Lebanese Army Directorate of Geographic Affairs Head of Security Section	Tel: +961 5 556 179	Navy@army.gov.lb
Abdel Hafeez KAYSSI	Ministry of Public Works & Transport Directorate General of Land & Maritime Transport	Tel: +961 1 371 644/5/6 Fax: : +961 1 371 647	Georges Picot Street STARCO Building 3rd floor-Beirut Ministry@transportation.gov.lb

Alexandre SURSOCK	National Centre for Geophysical Research Director	Tel: +961 4 981 885 Fax: +961 4 981 886	Bhannes-Metn P.O.Box 165432, Ashrafieh, 1100-2040, Beirut asursock@cnrs.edu.lb
Georges Berbari	Ministry of Environment Service of Prevention from Technological Impacts and Natural Disasters	Tel: +961-1-976512 and +961-1-976555 (Ext 412) Fax: +961-1-976512	Lazarieh Building - 7th floor (Room 7-42) P.O.Box: 11-2727 Beirut – Lebanon j.berbari@moe.gov.lb

Structure of the National Hydrographic Service (Department level in the Lebanese Navy)



C-55 Input from France

C-55 Questionnaire

Please provide the following contact information:

Name: **Email address:**

Country: Liban **INT Charting Region** F

Status of hydrographic survey of all navigable waters, including internal waters, out to the limits of the EEZ.

Survey coverage, where:

A = percentage which is adequately surveyed.
B = percentage which requires re-survey at larger scale or to modern standards.
C = percentage which has never been systematically surveyed.

	A	B	C
Depths < 200m	6	15	79
Depths > 200m	7	0	93

Amplifying information:

1 Special national circumstances which influence the statistical break-down above (e.g. geographical factors such as narrow continental shelf or fringing reefs, or constraints such as areas of unstable seabed which require a routine resurvey programme):

2 Significant shortfalls in sea areas of high priority for maritime traffic:

2.1 Maritime Shipping Routes:
International (i.e. between hub ports):
Regional
Internal (i.e. from feeder ports to other national ports; cruise liner routes)

2.2 Ports and Approaches

2.3 Others

1. Data provided by France and UK.
2. The only systematic surveys are in the immediate approaches to the main ports. None of them are modern.

Status of Nautical Charting Information

If you do have a nautical charting capability, please complete the details below:

Status of nautical charting within the limits of the EEZ.

Coverage of charts published by your organisation, where:
A = percentage covered by INT series, or a paper chart series meeting the standards in M-4.
B = percentage covered by Raster Navigational Charts (RNCs) meeting the standards in S-61.
C = percentage covered by ENCs meeting the standards in S-57.

	INT Charts	RNC	ENC
Offshore passage/Small scale	100	0	NA
Landfall and Coastal passage/Medium scale	100	0	100
Approaches & Ports /Large Scale	100	0	85,7
	A	**B**	**C**

Amplifying notes:

1. Data provided by France and UK.
2. Percentage of metric charts: 100%; Percentage of WGS84 charts: 66%re

Significant gaps in coverage:

Status of Marine Safety Information

Does your appropriate authority provide any of the following services?

Please indicate the status of implementation of the services; (YES, NO, Partial, Unknown).
Use the Notes input boxes to indicate services which are provided by another state, and facilities co-ordinated and/or shared with other coastal states.

MSI Service	
a. Local Warnings	Unknown
b. Coastal Warnings	Unknown
c. NAVAREA Warnings	Unknown
d. Port Information[1]	Unknown

[1] Confirm that a system exists for passage of information on changes in ports and harbours to the responsible charting authority.

MSI Notes
Please indicate, to which service above the note refers.

GMDSS[2]	
a. Master Plan	NO
b. A1 Area	NO
c. A2 Area	NO
d. A3 Area	YES
e. NAVTEX	NO
f. SafetyNET	YES

[2] See also the guidance in Navigational Publications published by Hydrographic Offices e.g. ALRS 5.

GMDSS Notes

Please indicate, to which service above the note refers.

National priorities for international and or regional co-operation or assistance.

1 If international or regional projects are underway in your waters, please indicate here:

2 Indicate below any priorities for co-operation or assistance:

2.1 Projects meriting IHO liaison with international funding agencies:

a. Regional co-operative projects: *(Indicate involvement of RHC, or other Member and non-Member states)*

b. National projects: *(Indicate any bilateral co-operation with Member or non-Member states).*

2.2 Requirements for training assistance:
(Use M-5 and S-47 to identify level of qualification and course required).

a. Hydrographic surveying:

b. Nautical cartography:

c. MSI:

2.3. Requirements for assistance with procurement of equipment:

a. Technical advice on procurement options:

b. Transfer of equipment:

Date: 16/01/2014 Format: DD/MM/YYYY

Charting Analysis of Lebanon Waters

1. Lebanon Chart Coverage

The Republic of Lebanon does not have a chart production capability and relies historically on the SHOM to fulfil this function. The resume of chart coverage for Lebanon shown in IHO Publication C-55 - *Status of Nautical Charting* (updated 16 January 2014) is shown in the table below, as updated by SHOM. There are no significant gaps in coverage.

Chart Type	% Covered by INT Charts	% Covered by RNCs	% Covered by ENCs
Small Scale: Offshore Passage	100	0	N/A
Medium Scale: Landfall, Coastal Passage	100	0	100
Large Scale: Approaches and Ports	100	0	87,5

IHO C-55 Status of Chart Coverage

While C-55 shows that Lebanon is well covered by charts, it must be noted that the quality of the underlying data is not adequate. The surveys were not done to modern standards.

2. SHOM Charts

The published charts and current state of maintenance is shown in the table below. Percentage of WGS84 charts are %66 and the percentage of metric charts are %100 of the portfolio.

SHOM Chart INT Chart	Title	Datum	Scale	Latest Edition Date
7255 INT 3606	De EILadhiqiyeh a Sour	EUR50	1:251.500	1991
7256 INT 3608	De Sour a Al Arish	EUR50	1:258.100	1991
7348 INT 3670	Approches de Beyrouth	WGS84	1:30.000	2003
7514 INT 3671	Ports du Liban	WGS84	1:25.000 1:20.000 1:25.000 1:25.000	1998

Summary of SHOM Charting

3. British Admiralty Charts

The published charts and current state of maintenance is shown in the table below.

UKHO Chart INT Chart	Title	Datum	Scale	Last edition date
1561	Ports Lebanon A-Trablous B-Tel Aviv and Yafo C-Saida D- Sour	WGS 84	25.000 25.000 20.000 25.000 25.000	25.02.1999
1563	Aproaches to Beyrouth A-Beyrouth B-Port de Joünie	WGS 84	30.000 12.500 10.000	13.02.2014
2633	Latlaquie to sour Famogusta	WGS 84	300.000	04.03.2010
2634	Beyrouth to Gaza	WGS 84	300.000	31.03.2011

Summary of British Admiralty Charting

4. ENCs

There are 9 ENCs produced by France, UK and Turkey covering the Lebanese waters.

ENC No	Title	Published (Last NtoM/Year)	ER issued since Publication
FR57514A (Harbour)	Approaches to Tarabulus (Tripoli)	2010	2
FR511010 (Harbour)	Beyrouth (Beiroût) harbour and approaches	2006	10
FR57348B (Harbour)	Joûnié Harbour	2006	2
FR57514D (Harbour)	Loubnâne (Lebanon) - Approaches to Sur (Tyr)	2008	1
FR57514C (Harbour)	Mediterranean Sea - Port of Lebanon - Approaches to Sayda (Saïda)	2011	3
FR411010 (Approach)	Outer approaches to Beyrouth (Beiroût)	2006	11
FR311010 (Coastal)	Tartoûs to Soûr	2006	12
GB302633	Eastern Mediterranean (between Cyprus and Lebanon)	2011	3

(Coastal)			
TR100030 (Overview)	Eastern Mediterranean	2014	1

Summary of ENCs

IHO Yearbook Revision

LEBANON (REPUBLIC OF)

HYDROGRAPHIC SURVEYS SECTION Directorate of Surveys and Mapping Ministry of Lands, Housing and Human Settlements Development P.O. Box 9132 DAR ES SALAAM	
Department of which the Hydrographic Office is part – Ministère dont dépend le Service Hydrographique – Ministerio del que depende el Servicio Hidrográfico	Lebanese Navy
Principal functions of the H.O. – Attributions principales du S.H. - Principales funciones del S.H.	Definition of National hydrographic policy and the provision of the secretariat for the National Hydrographic Committee.
National day – Fête nationale – Fiesta nacional	
Telephone: **Fax:** **E-mail:** **Website:**	
Date of establishment and Relevant National Legislation – Date de fondation et législation nationale concernée – Fecha de establecimiento y Leyes nacionales de referencia	National Hydrographic Service established 1st February 2014.
Name and rank of the Director or Head – Nom et grade du directeur – Apellidos y graduación del Director	Radm.Joseph WAKIM
Tonnage – Tonelaje	
Total Budget – Budget total – Presupuesto Total	
Staff employed – Effectifs – Plantilla **- Hydrographers (Name and rank of managing staff)** - Hydrographes (Nom et grade du personnel de direction - Hidrógrafos (Apellidos y graduación del personal directivo)	Cdr. Ziad ALLAM Cdr. Mazen BASBOUS Cdr. Mustapha ALY Lt. Giscard SAAD

Surveying vessels/ Aircraft - Bâtiments hydrographiques/aéronefs - Buques Hidrográficos/Aeronaves	One scientific research vessel operated by National Council for Scientific Research (CNRS).
N° of charts published - *Nombres de cartes publiées - N° de cartas publicadas.*	(Chart Area of coverage) Own waters of Lebanese Coast, SHOM &British Admiralty Charts are used.