



REPUBLIC OF CYPRUS

**NATIONAL REPORT OF CYPRUS
TO THE
MEDITERRANEAN AND BLACK SEAS HYDROGRAPHIC
COMMISSION (MBSHC)**

JUNE 2017

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1. Hydrographic Office / Service

In Cyprus the various functions of a typical Hydrographic Office are scattered across various departments. In order to avoid duplication of work and to make full use of the existing infrastructure, it was decided to establish a National Hydrographic Committee for better coordination.

1.1 Cyprus National Hydrographic Committee

The Council of Ministers of the Republic of Cyprus with its decision number 513/7 established Cyprus National Hydrographic Committee (CNHC) which deals with all hydrographic matters in the country. The CNHC is composed by the representatives of the Ministry of Defence Ministry of Foreign Affairs, and from the Departments of Lands and Surveys (DLS), Public Works, Geological Survey, Fisheries and Marine Research, Merchant Shipping and the Cyprus Ports Authority. The CNHC is chaired by the DLS. On a later stage, the Cyprus Joint Rescue Coordination Centre, the Department of Environment, the Department of Antiquities and the Cyprus Police, joined the CNHC.

Although CNHC made significant progress, it became clear that the cartographic contribution of DLS should be further strengthened. On 11/07/2014, the Law concerning the organisation and conduct of hydrographic activities and issuance of nautical charts, was voted for by the House of Representatives of the Republic of Cyprus. This law authorises the Department of Lands and Surveys (DLS) to act similarly to a Hydrographic Office (HO).

1.2 Department of Lands and Surveys

The Department of Lands and Surveys, according to the legislation, is responsible to process and evaluate information and data of hydrography and nautical cartography for the purpose of:

- (a) contributing to the safety of mariners;
- (b) implementing, exploiting, promoting and developing sciences related to hydrography and marine cartography.

The Director of DLS is the Hydrographer of Cyprus. The DLS has a Hydrographic Unit which deals with all aspects of Hydrography and Nautical Cartography. The Hydrographic Unit operates under the supervision of the Geodesy-Hydrography-Photogrammetry Branch. The DLS represents the Republic of Cyprus to the International Hydrographic Organisation and its subordinate organs.

In the Hydrographic Unit of DLS, 5 employees are appointed. DLS is a department with extensive knowledge and experience in land surveying, cartography, photogrammetry, GIS, geodesy, etc. Since 2006, DLS had the opportunity to obtain 2 scholarships in nautical cartography, one in 2006 from UKHO and one in 2011 under the IHO Capacity Building. In February 2016, DLS conducted a training course on ENC production.

DLS has bilateral agreements with the Hellenic Navy Hydrographic Service (Memorandum of Understanding) and the United Kingdom Hydrographic Office (Exchange of Letters).

During 2016 - 2017, no official or technical visits occurred from neither IHO officials nor other HOs.

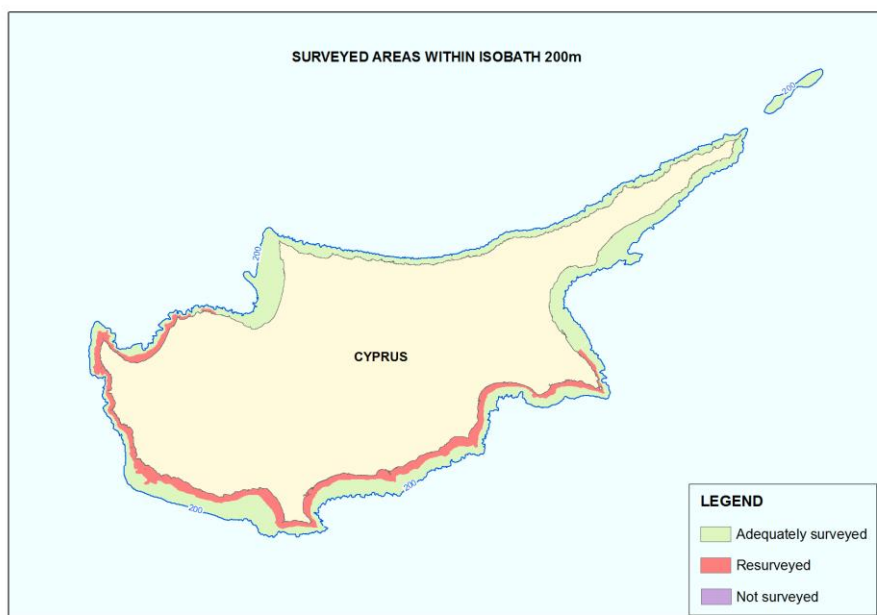
2. Surveys

2.1 General information

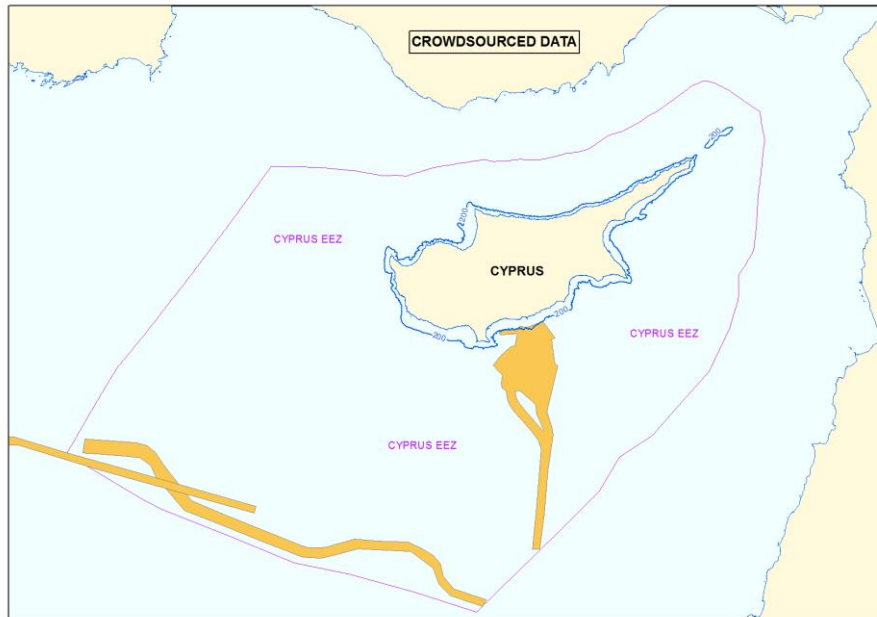
Waters of the Republic of Cyprus from 0-200 m have been adequately covered with various surveys conducted until 1960. With the establishment of CNHC, a resurvey program was defined, which started implementation in 2012. Two Hydrographic Surveys have been conducted:

- 2012 with MBES
- 2014 with LiDAR

Data retrieved are S-44 compliant (order 1a, 1b). So far all coastal areas controlled by the Republic of Cyprus, from 0 – 50 m depth, have been resurveyed.



Waters beyond 200 m depth have not been adequately surveyed. For the time being, the priority of DLS is to carry out the resurvey program up to 200m depth. DLS collects data, from various activities carried out in the Exclusive Economic Zone of the Republic of Cyprus (Crowdsourced Bathymetry).



2.2 Coverage of new surveys / Future plans

No new surveys have been conducted during 2016-2017.

The DLS in cooperation with the Department of Fisheries and Marine Research are planning to launch a hydrographic survey (order 1a) to cover waters from 50m – 200m depth, in 2017. The project is funded by EU and National Funds.



2.3 New technologies and /or equipment

Nothing to report. The DLS has decided to further invest in hydrographic surveying equipment in the following years.

2.4 New Ships

Nothing to report.

2.5 Problems encountered

Lack of an established vertical datum to support hydrographic activities. The existing Vertical Reference System was established in 1930 using limited extent of sea level data deemed not suitable for hydrographic purposes. A new Vertical Reference System is under development which shall be connected directly to sea level.

3. New charts & updates

3.1 ENC

For the time being Cyprus does not produce ENCs. The Republic of Cyprus has authorised the UKHO to produce on its behalf ENCs (11 cells) and other nautical publications that cover the maritime zones of Cyprus. Any other ENCs produced by a third party, in relation to the maritime zones of the island, and, in particular, the ENCs produced by Turkey in relation to the maritime zones of Cyprus in the northern part, are being produced without the consent of the Republic of Cyprus, thus, illegally, and may not, therefore, be deemed as official.

DLS considers the option to undertake the production and maintenance of ENCs in the future.

3.2 ENC Distribution method

Nothing to report.

3.3 RNC

Nothing to report.

3.4 INT charts

Nothing to report.

3.5 National paper charts

Chart DLS 1001 has been produced and it is only for intergovernmental use.

3.6 Other charts, e.g. for pleasure craft

Various coastal maps were prepared for use by government departments, members of the CNHC. These include maps showing Maritime Zones, maps for prevention of coastal erosion, maps for coastal management etc.

3.7 Problems encountered

Lack of an established vertical datum to support hydrographic activities (see paragraph 2.5)

4. New publications & updates

4.1 New Publications

As part of the development of the Nautical Information Database, a survey started in 2010, which is related to coastal sea names. The survey has been completed and all data has been delivered to the Cyprus Permanent Committee for the Standardization of Geographical Names for validation. In the following months a new publication with the results of the survey shall be available to the public.

4.2 Updated publications

Nothing to report.

5. Maritime Safety Information (MSI)

5.1 Existing infrastructure for transmission

Cyprus Radio Coastal Station is providing Maritime Safety Information (**MSI**) within the area of Cyprus Search and Rescue Region which coincides with the Nicosia FIR. Cyprus Radio, currently is operating on the command of the Joint Rescue Coordination Center in Larnaca.

Cyprus Radio collects and elaborates all the relevant navigational, meteorological and any other safety and urgent information and preparing NAVTEX bulletin accordingly, in order to ensure the safety of navigation within its area of responsibility.

Cyprus Radio has all the distress and safety communication facilities according to the GMDSS Master Plan and is operating on a 24/7 basis.

The NAVTEX transmissions are conducted according to the defined prototypes and procedures determined in the NAVTEX manual (IMO/IHO NAVTEX Manual). Cyprus Radio is broadcasting the MSI Warnings using the English language on frequency 518 KHz.

Year	NAVTEX Bulletins	NAVWARS	NAVAREA III Warnings	NAVMETEO	SARWARNS
2015	1012	245	9	767	8
2016	1136	374	15	762	7
2017 (until 9 May)	446	185	11	261	3



Cyprus Radio NAVTEX Service and Coverage Area

5.2 New infrastructure in accordance with GMDSS Master

Nothing to report

5.3 Problems encountered

Cyprus has been notified that other coastal stations in the region broadcast MSI warnings out of the prefixed timetable, affecting at that time the transmitting of MSI warnings on Cyprus Radio.

6. C-55

6.1 Latest update (Tables)

Last updates have been sent ([C-55 CYF-20170602.xls](#))

C-55 Summary for:				Comments on Charts:
Country:	Cyprus			For the time being Cyprus does not produce ENC's. The Republic of Cyprus has authorised the UKHO to produce on its behalf ENC's (11 cells) and other nautical publications that cover the maritime zones of Cyprus. Any other ENC's produced by a third party, in relation to the maritime zones of the island, and, in particular, the ENC's produced by Turkey in relation to the maritime zones of Cyprus in the northern part, are being produced without the consent of the Republic of Cyprus, thus, illegally, and may not, therefore, be deemed as official.
Country Iso Code:	CYP			
Country SubCode:	CYP-F			
INT Region:	F			
Country/Depend:	C			
Last updated:	02/06/2017			
Provided by:	Cyprus			
Chart coverage	Passage (%)	Coastal (%)	Port (%)	Comments on Surveys:
INT	0	0	0	
RNC	0	0	0	
ENC	0	0	0	
Status of Paper Charts				Area up to 200m depth: The Republic of Cyprus since 2012 has started a resurvey program and has covered all coastal areas between 0-50 m depth. An area of about 1200 Sq. Km (43%) cannot be surveyed because of the continuing illegal, military occupation of 36,2% of Cyprus' territory by Turkey. / Area beyond 200m depth: An area of about 6000 Sq. Km have been surveyed to cover other needs (not S-44 compliant). An area of about 14250 Sq. Km (15%) cannot be surveyed because of the afore-mentioned Turkish occupation.
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)	
0-200m	100	24	0	
> 200m	3	0	97	
MSI	Y/N	Comments on MSI:		
Local warning	YES			
Coastal warning	YES			
Nav warning	YES	via NAVAREA III (SPAIN is NAVAREA III Co-ordinator).		
Port warning	YES	VTS LIMASSOL PORT		
GMDSS	Y/N	Comments on GMDSS:		
Master Plan	YES	GMDSS 1/CIRC 19/20 JULY 2016		
Area A1	YES			
Area A2	YES			
Area A3	YES			
NAVTEX	YES	THE CYPRUS SEARCH AND RESCUE REGION WHICH COINCIDES WITH THE NICOSIA FIR		
SafetyNet	YES			

7. Capacity Building

7.1 Offer of and/or demand for Capacity Building

7.1.1 Offer

At this stage it is not possible to offer a program to the Capacity Building.

7.1.2 Demands

DLS needs further knowledge and experience regarding Hydrography and Hydrographic Data Management, so support on these topics is substantial.

DLS has applied for a scholarship under the Capacity Building Program (CL 51 / 2016), which was unsuccessful. DLS intends to re-apply in the future.

7.2 Training received, needed, offered

7.2.1 Training received

No training was received through the IHO Capacity Building during 2016 - 2017.

8. Oceanographic activities

8.1 General

Oceanographic Activities are carried out by the Cyprus Oceanography Centre (**COC**). The data are shared amongst the members of the CNHC.

8.2 Cruises / Observational Programs

Usually, an annual cruise is planned in the Cyprus EEZ to measure water properties like temperature, salinity, dissolved oxygen, nutrients, etc. During 2016 and 2017, due to lack of funding, no cruises took place.

The COC carried out one observational program in 2016-2017: a joint project known as CINEL (Circulation and Water Properties in the Northeast Levantine: <http://nettuno.ogs.trieste.it/sire/cinel/>) with oceanographers at OGS of Trieste, Italy. The program focuses in measuring sea pressure, temperature, conductivity, dissolved oxygen, optical backscatter (470 nm and 700 nm) as well as chlorophyll-a fluorescence (em: 470 nm/ex: 690 nm), all in the upper 1000 m using gliders. The program was launched in August 2016 and it is still in progress.

The Oceanography website <http://www.ucy.ac.cy/oceanography/en/> maintains predictions regarding waves and currents corrected by merging with glider data which derived by CINEL.

8.3 GEBCO/IBC's activities

Nothing to report

8.4 Tide gauge network

In the past a tide gauge network collecting sea level data supporting a tsunami warning system, was existing. This network is no longer operational. It has been decided by DLS to introduce a new tide gauge network to support, not only the tsunami warning system, but also the establishment of a Vertical Reference System to suit all hydrographic activities. For the completion of this project, three main stakeholders are collaborating: the DLS which has the overall responsibility of implementation, the Cyprus University of Technology (**CUT**) and the COC. The first tide gauge has already been installed by the CUT in Limassol in December 2016 and 4-5 more are planned to be installed later this year.

8.5 New equipment

OTT RLS Radar Level Sensor supported by a meteorological sensor has been installed in Limassol in December 2016.



The Oceanography Center has worked with collaborators in Italy to deploy Italian profiling floats, drifters, and gliders, in addition to the gliders of the COC.

8.6 Problems Encountered

The tide gauge network was unexpectedly disabled.

Due to lack of funding, the usual cruise taking place since 1995 by COC (originally supported by government budget) was discontinued in 2013 and has not yet been restored.

9. Other Activities

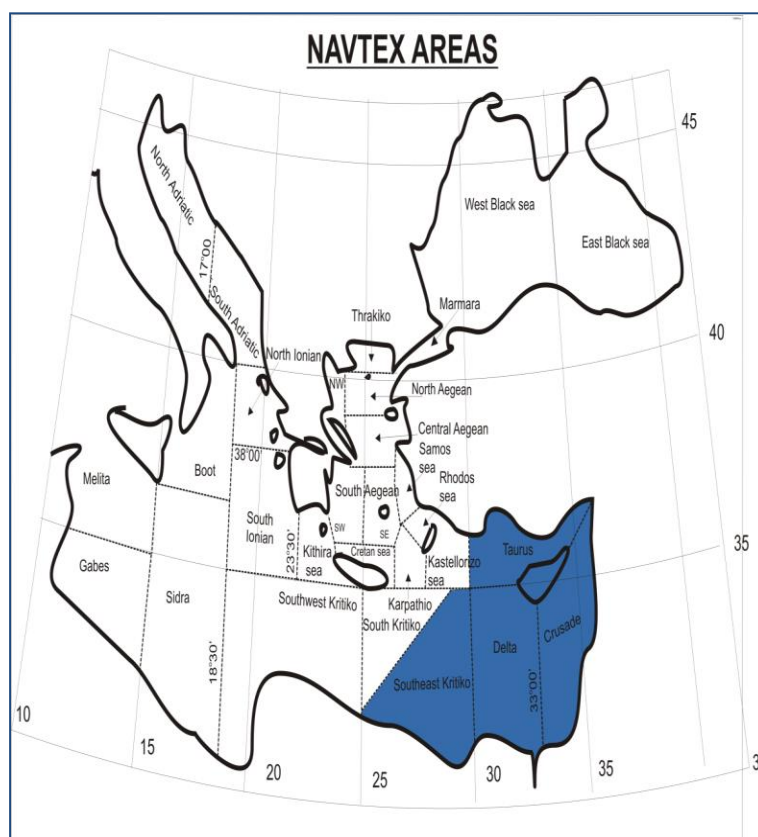
9.1 Participation in IHO Working Groups

During A-1, Cyprus became member of the Council of IHO.

9.2 Meteorological data collection

The Sea Area forecasts provided by Larnaka Forecasting Office covers the sea region around the island and 8 Km seawards. All forecasts issued consist of a concise statement of the expected wind and sea state conditions at a certain area during the forecasting period.

The weather forecasts for NAVTEX service provided by Larnaka Forecasting Office cover the sea region in four NAVTEX areas, namely SOUTHEAST KRITIKO, DELTA, CRUSADE and TAURUS (shown below) which are registered in WMO No 9 Volume D, ("Information for shipping"). Warnings are also issued for the aforementioned areas, if and when necessary.



The NAVTEX reports (including warnings) are sent to Cyprus Radio by email for further dissemination. They are also uploaded to the WMO Website <http://weather.gmdss.org/>, through the Aeronautical Fixed Telecommunication Network (AFTN), and to the Department of Meteorology website. Marine Gale Warnings must be sent via AFTN independent of NAVTEX forecasts and even if their time of issue is identical.

9.3 Geospatial studies

The Cyprus University of Technology Laboratory of Geodesy (**CUT LoG**) focuses on Satellite and Marine Geodesy subjects. Specifically, the lab is coordinating ongoing research on the determination and justification of the geodynamic regime of Cyprus. This research component involves high-precision GPS/GNSS monitoring to (a) compute displacements and velocities due to tectonic plate motion and natural hazards, and (b) map active faults. Furthermore, the CUT LoG has already established a state-of-the-art radar-based tide gauge, along with advanced meteorological sensors to determine sea level trends and work towards the definition of the vertical datum of Cyprus in cooperation with the Department of Lands and Surveys (DLS). In this direction, a precise vertical control network has been established in the city of Limassol and is anticipated to grow and merge with existing height benchmarks to cover the whole country.

9.4 Disaster prevention

The Council of Ministers of the Republic of Cyprus, with its decision number 81.712 (25/11/2016), established the Cyprus National Committee – Tsunami Warning System (**CNCTWS**). The CNCTWS is formed by the Geological Survey Department, the Civil Defence and the Cyprus Oceanographic Centre with the following mandate:

- Represent the Republic of Cyprus at the NEAMTWS of IOC
- Select, process, manage, exchange of relevant data and cooperate with other data centres and committees of other neighbouring countries.
- Prepare action plan for the response to a tsunami, evaluate existing action plans

This committee is chaired by the Geological Survey Department and operates under the supervision of the Minister of Agriculture, Rural Development and Environment.

The CNCTWS has defined so far the focal points for the various working groups that operate under NEAMTWS.

9.5 Environmental protection

The Republic of Cyprus has determined a national action plan for the response to oil spills that can be implemented in three phases mainly depending on the scale of the incident.

When an oil spill occurs, the Department of Fisheries and Marine Research (**DFMR**) takes action with its own means. If the scale of the problem is not manageable, then DFMR collaborates with the Department of Merchant Shipping, which in its turn contacts EMSA for support.

The Republic of Cyprus is equipped with airborne and waterborne means to confront such incidents. DFMR conducts two operational exercises annually (ARGONAFITIS, NEMESIS).

The Department of Environment is responsible for the implementation of environmental legislation in Cyprus.

9.6 Astronomical observations

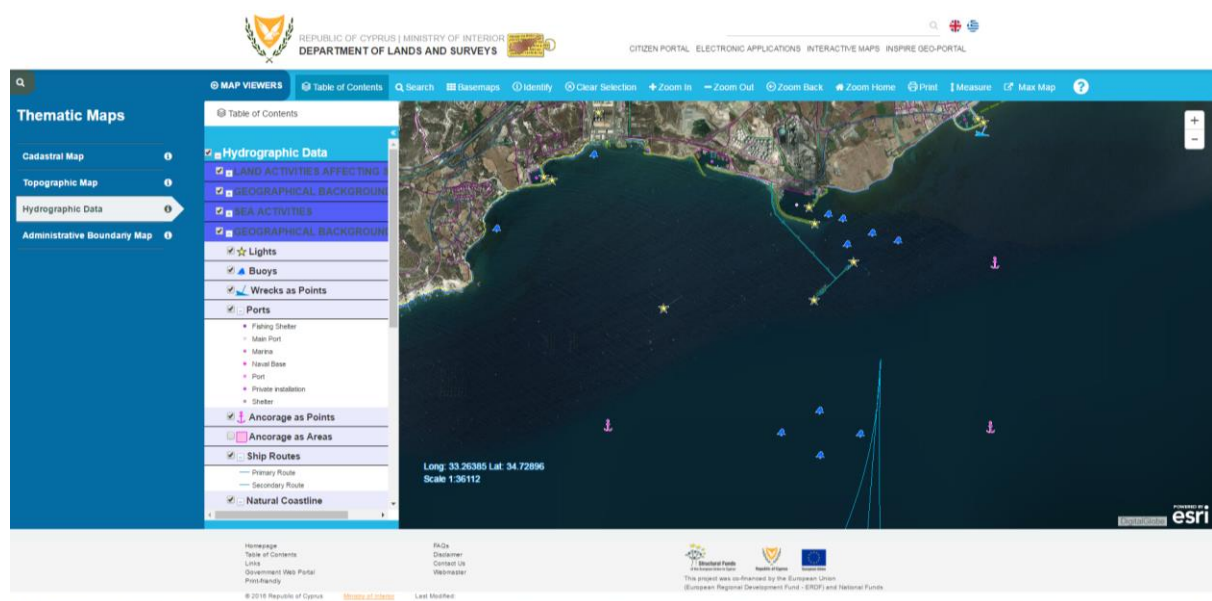
Nothing to report

9.7 Magnetic/Gravity surveys

Nothing to report

9.8 MSDI Progress

The Department of Lands and Surveys continues the development of the National Land and Hydrographic Data Base. Various online services, including data downloading services, are available in DLS-Portal (<http://portal.dls.moi.gov.cy>), which has been recently launched.



9.9 Legislation and other related activities

List of Laws and Regulations of the Republic of Cyprus in relation to its maritime zones (non exhaustive)::

- The United Nations Convention on the Law of the Sea (Ratification) Law of 1988 (No. 203 of 1988)

Territorial Sea:

- Territorial Sea Law (N. 45 of 1964), as amended in 2014
- Law concerning the regulation of innocent passage through the territorial waters (28(I)/2011)

Contiguous Zone:

- Law to provide for the proclamation of the Contiguous Zone (63(I)/2004)

Exclusive Economic Zone and Continental Shelf:

- Exclusive Economic Zone and Continental Shelf Law (64(I)/2004), as amended in 2014

Regulations issued in accordance with the Law 64(I)/2004:

- Marine Scientific Research Regulations of 2014
- Submarine Cables Regulations of 2014
- Submarine Pipelines Regulations of 2014

Regulations still in force, issued in accordance with the abolished Law on Continental Shelf of 1974:

- Safety Zones Regulations of 2013

Other laws applying in the maritime areas

- Organisation and Execution of Hydrographic Activities and Publication of Nautical Charts Law of 2014 (N.96(I)/2014)
- Geological Surveys Law of 2013 (N.140(I)/2013)
- Antiquities Law, Cap. 31 (as amended in 2014)

The Department of Merchant Shipping is coordinating all relevant parties for the preparation of a strategic action plan as part of the National Integrated Maritime Policy. It has also filed a draft bill for Maritime Spatial Planning to be voted in 2017 by the Parliament of the Republic of Cyprus.

Finally, there is a National Working Group (WG) responsible for the Integrated Coastal Zone Management (ICZM) chaired by the Department of Environment.

10. Conclusions

Cyprus is heading towards Blue Growth and this can be achieved through investment in the development of Hydrographic Services, promoting safety of navigation. The CNHC has established a mechanism to further develop hydrography in Cyprus. Through collaboration it was managed to acquire data extending to 200 m depth and complete the resurvey program.

All data retrieved by members of CNHC is collected, stored and maintained by the DLS, thus creating the appropriate conditions to take on a substantial and active cartographic role. Throughout the work cycle issues emerge, which are acknowledged, thoroughly considered and efforts are made for their resolution.

However the significant lack of knowledge in hydrography is a break towards further development. The support from the Capacity Building of IHO is more important than ever. Nevertheless during the past two years Hydrography is under constant development and this should be sustained.