

**NATIONAL HYDROGRAPHIC OFFICE
OF
NATIONAL AQUATIC RESOURCES RESEARCH & DEVELOPMENT AGENCY.**

SRI LANKA

NATIONAL REPORT

**TO THE 13TH MEETING OF THE
NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION
IN
MYANMAR**



NATIONAL HYDROGRAPHIC OFFICE
National Aquatic Resources Research & Development Agency
Crow Island, Mattakkuliya, Colombo 15, SRI LANKA.

Department of which the Hydrographic Office is part	Ministry of Fisheries & Aquatic Resources
Principal functions of the H.O.	<ul style="list-style-type: none"> ➤ Conducting Hydrographic/Bathymetric Surveys in the Sri Lankan waters and production of nautical charts. ➤ Establishing sea level datum and relate them to land datum through analyzing tides. ➤ Data gathering & processing ocean currents, water movement, tides and other oceanographic parameters of interest to navigation & maritime related activities. ➤ Charting hazardous zones for navigation. ➤ Providing professional services in hydrography and cartography to institutions, dealing with coastal and offshore development and utilization of ocean resources. ➤ Conducting scientific research on Hydrography ➤ Establishing and maintaining cooperation with international and national institutes related to hydrography.
National Days	4 th February
Contacts	TP: +94-011-2521705 Fax: +94-011-2521699 nho@sltnet.lk www.nara.ac.lk
Date of Establishment and Relevant National Legislation	13.03.1984 Parliament Act (NARA) 1982 & 1996
Name and Rank of the Director or Head	M.A. Ariyawansa Hydrographer / Head
Tonnage	150088.73 (as at 1 st July 2006)
Staff employed	10 Hydrographic Surveyors, 03 cartographers, 01 Chief system analyst, 02 ERA, 02 survey recorders, 06 survey helpers
No. of Charts publish	12
Surveying Vessels	RV Samuddrika – Survey & Research Vessel Tharanga - Survey Boat Mala - Survey Boat Tharani- Survey Boat Services of Naval vessels are utilized under temporary Basis when available.

2. SURVEYS

2.1 Coverage of New Surveys

Bathymetric Survey of Trincomalee Harbour has been totally completed Under the National Charting Programme in order to update the existing Admiralty chart which is published by the British at 1978.

Offshore bathymetric survey has been started and continuing to revise the Approaches to Trincomalee Harbour Chart, which is also published at the same year

Near shore bathymetric survey has been conducted at Kalpitiya Bar reef for the purpose of demarcation the marine protected area

In addition to those new surveys, NHO also involved in some of custom made bathymetric surveys according to the clients requirements. NHO mainly caters consultancy services to local institutes such as Coast Conservation Dept., Sri Lanka Ports Authority, Ceylon Fishery Harbour Corp., Sri Lanka Navy, Shell Gas Company, Ceylon Electricity Board and Ceylon Petroleum Corp etc.,

2.2 New Technologies / Equipment

The new technology, equipment and software used in this institute are RESON Sea Bar 8101 – Multibeam system, SES 2000 – sub bottom profiler, SeaStar 8300HP/Omnistar GPS, DESO 30 dual frequency echo sounder, RESON SVP 40 sound velocity prob, Leica TCR 1202 Robotic total station, Wild TC 1600 total station, Caris GIS4.5, Hypack Gold, Leica GEO Office and PDS 2000 multibeam processing software.

Arc GIS 9.2 and Erdas Imaging software use for the purpose of GIS and Remote Sensing Analysis.

2.3 New Ships

The National Hydrographic Office of NARA, Sri Lanka purchased and commissioned the new survey and research vessel “ RV Samuddrika” classified for sea area 3. She is a multipurpose medium size vessel, which deployed in September 2012 in the Sri Lankan water for fulfilment of long term needs on Hydrography and Oceanography activities of the region.





“Samuddrika” is well equipped with new technologies to handle Bathymetry, Salinity and temperature profiling, Surface Current, Sub bottom profiling, Plankton and chlorophyll sampling, Water quality parameters, Under water Visual inspection, Fish sampling, fishing gear testing and FAD deployment and monitoring

3. NEW CHARTS AND UPDATES

3.1 ENCs

NHO feels the necessity of production of ENC, due to unavoidable circumstances we have been unable to execute the ENC charting scheme as per the requirement of IHO. Government of Sri Lanka has been allocated 50,000 USD for the year of 2013, to purchase the ENC tool software and training.

UKHO has produced ENC for SRI LANKA – West Coast- Colombo Harbour and Approaches (4115(P) / 2007). Source : Sri Lanka Hydrographic Office (SEP-2007000052342-1)

3.2 National Paper Charts

NHO is carrying out National Nautical Charting Programme to conduct hydrographic surveys and produce nautical charts, near shore and off shore areas upto EEZ of Sri Lanka. Under this programme new charts and updates will be producing depend on priority of mariners, seafarers and government requirements.

3.3 Problems Encountered

NHO has identified the requirement of the deep water echo sounder for conducting offshore bathymetry with the new survey vessel.



4. NEW PUBLICATIONS AND UPDATES

4.1 New Chart - Approach to Magampura Mahinda Rajapaksha Port

Hambantota

Updates - Trincomalee Harbour

5. MARITIME SAFETY INFORMATION (MSI)

5.1 Existing infrastructure for transmission

GMDSS facilities are not available in Sri Lanka. Telecommunication Regulatory Commission is responsible for upgrading existing facilities. At the moment facilities available are VHF system channel 16 Medium frequency 2182HZS Communicating with Bangalore Maritime earth Satellite Station

5.2 Problem encountered

Still no available project in progress to establish GMDSS system in Sri Lanka

6. S-55

6.1 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.

Depth	A	B	C
<200m	8.6	5	91.4
>200m	2	0	98

6.1.1 Amplifying Information

Entire area under less than 200m depth has to be surveyed due to the effect of tsunami in the year 2004. Some areas such as main harbour approaches, fishery harbours, lagoons and near shore passages have been surveyed in large scale with modern standards.



6.2 Maritime Safety Information (MSI)

6.2.1 Navigational Information (S-53)

Service	Yes	No	Partial	Notes
Local Warnings	√			Via VHF Broadcast
Coastal Warnings	√			Via VHF Broadcast
Navarea Warnings		√		
Information of Ports and Harbours	√			

6.2.2 GMDSS Implementation (IMO Publication 970 – GMDSS Handbook)

Service	Yes	No	Partial	Notes
Master Plan		√		
A1 Area			√	Receiving only
A2 Area			√	Receiving only
A3 Area			√	Receiving only
NAVTEX		√		
Safety NET		√		

6.2.3 Status of National Charting within the limit of the EEZ.

Coverage of charts published by NHO/Sri Lanka

A = percentage covered by INT series, or a paper B = percentage covered by Raster Navigational charts. C = percentage covered by ENC's

Purpose / Scale	A	B	C
Offshore passage / Small	0	0	0
Landfall and Coastal passage / Medium	10	0	0
Approaches and Ports / Large	60	0	0

7. CAPACITY BUILDING

7.1.1 Last year five day training workshop on MSDI has been conducted in Sri Lanka with the collaboration of the IHO at the Taj Samudra Hotel, Colombo. The intention of the training is to enhance the capacity in the field of MSDI. and 16 countries of the North Indian Ocean region were participated in this training workshop.

7.1.2 Under IHO Capacity Building Programme – 5 days Workshop on Caris Chart Composer has been carried out with the participation of 07 members of NHO.

7.2 Training needed

- 1 Category A in hydrography
- 2 Post graduate courses (M.sc)
- 3 Category B in hydrography
- 4 ENC production
- 5 Multibeam – on the job training
- 6 Category A in Nautical Cartography
7. Category B Nautical Cartography

8. OCEANOGRAPHIC ACTIVITIES

8.1 General

Oceanography Division of NARA has been conducting multi disciplinary research and development activities around Sri Lankan Waters. In March 2007, division has established a 24 hrs. Operational centre, called Ocean Observation Centre (OOC) to monitor the real time ocean conditions around Sri Lanka. The centre collaborates with the Ministry of Fisheries and Aquatic Resources, Disaster Management Centre (DMC) and the Department of Meteorology in respect of ocean based disasters, early warning and mitigation of impacts from natural disasters. In addition to ocean based disaster activities, centre gathers and analyses the oceanographic data around Sri Lanka Waters for other applications such as fisheries, navigation, climate changes and environmental studies.

8.2 Tide Gauge Network

Currently three real time transmitting tide gauges covering west, south east and east coasts are operational in Sri Lanka, which are part of Indian Ocean Tsunami Early Warning System and GLOSS. Colombo station has equipped with 02 pressure sensors, 02 floating gauges and radar sensors. It measures sea level every 01 minute and transfers data every 15 minutes via Japanese Meteorological Satellite (JMA) and MeteoSat. Trincomalee and Kirinda Stations measure sea levels every 01 minute and transfer data every 15 minutes via MeteoSat. All three stations are



equipped with pressure and radar sensors. Real time data are also in GTS. Plans are in place for further stations, starting with Battalangoduwa in the north-west of the island, which will be equipped with satellite transmission equipment for real-time monitoring as part of the Global Sea Level Observing System and Indian Ocean Tsunami Warning System.

8.3 New Equipment

Two BGAN system tide gauges are planned to be installed in Sri Lanka with the assistance from IOC and Proud Man Oceanographic Laboratory, UK.

9. Other Activities

9.1 MSDI Progress



NHO expects to develop a platform for the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. This attempt will provide a basis for spatial data discovery, evaluation, and application for users and providers within all levels stakeholders. Our MSDI would typically include information on seabed bathymetry, geology, marine infrastructures (e.g. offshore installations, constructions, pipe lines, submerge cables, etc.); administrative and legal boundaries, areas of conservation, marine habitats and oceanographic data. This would be immensely benefited for the development of marine industry, promotion of marine related activities as well as the implementation of sustainable management of marine environment.

Currently we have integrated all available ocean related data of all NARA Division to MSDI and our next step is to expand it to the data of all other ocean related institution within the country.



9. CONCLUSION

The NHO is highly concentrating to survey near shore tsunami effected coastal areas. During the last year, NHO was mostly engaged with coastal engineering and bathymetric surveys of western and southern coast. Most of these data are frequently used by coastal development institutions such as Coast Conservation Dept, Ceylon Fishery Harbours Corporation and Sri Lanka Ports Authority etc., these data will be used to produce near shore nautical charts too. According to the prevailing peaceful situation of North and Eastern regions of Sri Lanka, now we concentrate on new surveys of those areas which were neglected last three decades. The new research vessel is expected to deploy in North and Eastern regions of Sri Lanka and will be able to give priority to acquire bathymetric data in those areas.

National Hydrographic Office is currently engaged in implementing the Marine Spatial Data Infrastructure for Sri Lanka to provide a framework to integrate and collate standardized information.

