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NATIONAL REPORT - MAURITIUS

(As on 20 Jul 18)

REPUBLIC OF MAURITIUS

15TH MEETING OF SOUTH AFRICA AND ISLANDS HYDROGRAPHIC COMMISSION

Victoria, Seychelles

27-30 August 2018

1. Hydrographic Office and Services

1.1. Introduction

Mauritius is an Island nation of approximately 2040 sq. km. situated 20° South of the Equator and on longitude 57.5° East. Mauritius is a maritime state with a large Exclusive Economic Zone (EEZ) of around 2.3 million square kilometres. In addition, an area of 396,000 square kilometres of seabed in the Mascarene region is jointly managed by the Government of Mauritius and Republic Seychelles as endorsed by the United Nations Commission on Limits of Continental Shelf in 2011. Mauritius being signatory to International Maritime Organisation (IMO) Convention of Safety of Life at Sea (SOLAS) has national and international responsibilities to provide necessary services for enhancing safety of navigation in its area of jurisdiction. For the exploration and exploitation of the potential marine resources, systematic data collection is being carried out in the surrounding ocean.

Significant milestones have been achieved since the inception of this unit in 2013 in the field of Hydrography. The unit interacts on a regular basis with national as well as international agencies on the matters related to Hydrography. Therefore, in order to better reflect its role and capabilities, the unit has been rechristened as "***Mauritius Hydrographic Service***". Suitable Logo signifying the role of the Office has also been designed.

1.2. Cooperation between India and Mauritius

A Memorandum of Understanding (MoU) between Republic of Mauritius and Republic of India in the field of hydrography was signed on 24 October 2005. The MoU has been subsequently extended for periodic intervals. The MoU provides for cooperation in the field of hydrography between the two countries and assistance in production of navigational charts, training of staff and expertise for setting up of hydrographic infrastructure in

Mauritius. There is also provision for assistance by the Indian Hydrographic Office for hydrographic surveys in our EEZ, ports and lagoons.

1.3. **Hydrographic Infrastructure**

Mauritius Hydrographic Service under the Ministry of Housing and Lands is the nodal agency for hydrographic surveying and nautical charting in Mauritius. The Hydrographic Office was established November 2013 under the aegis of MoU with India. Over a period of time, the unit has developed the capacity to survey areas critical for shipping and surface navigation, carry out underwater search operations for wreck/ obstruction detection and survey extremely shallow lagoons surrounding the mainland and outer islands for supporting economic/ tourism related activities and is now working towards attaining medium and deep sea survey capability. In addition, significant progress has been made towards hydrographic support for scientific research & disaster management, physical modelling, sale of updated nautical products and developing expertise in matters related to maritime domain. Mauritius Hydrographic Service is also collaborating with Department of Continental Shelf, Maritime Zones and Administration for implementing GIS Platform for Marine Spatial Planning. The expansion of the services is currently being pursued with a firm roadmap for the future. The main areas of focus are as follows:-

(a) Enhance the capability in terms of equipment and manpower to provide hydrographic support to outer Islands of Rodrigues and Agalega as and when required.

(b) Develop marine cartography capability through capacity building programmes.

(c) Integrate MSI infrastructure in Mauritius with NAVAREA warning services.

(d) Establish maintenance and support procedure for hydrographic equipment to ensure sustained availability for operations.

(e) Fulfilling deep sea survey requirements through international collaboration.

(f) Procurement of modern equipment like Portable Multibeam Echo sounder and Acoustic Doppler Current Profiler for enhancing the scope of Hydrographic surveys being carried out by the unit.

(g) Upgrading the current Hydrographic data processing software suite to handle complex data from advanced survey equipment.

2. **Surveys.**

2.1. **Coverage of New Surveys**. The major surveys carried out since the last one year are enumerated below:-

(a) **Approaches to Grand Port**. The Indian Naval Surveying ship '***Sarvekshak'*** was deployed to undertake multi-disciplinary surveys in Mauritian waters for nautical charting and also to fulfil requirements from various stakeholders. The ship operated in South East of Mauritius for about 30 days commencing 30 December 17 for carrying out surveys for collecting data towards publication of the new chart "***Approaches to Grand Port***" at a scale of 1:30,000.

(b) **Check Survey of Inner Port Louis Harbour**. Being the only major harbour for shipping and maritime trade, frequent requests are received for check surveys of various berth/ channels of the harbour especially from the Mauritius Port Authorities. A comprehensive check survey of Port Louis Harbour was undertaken in Oct 17. To

ascertain the changes in bathymetry another check survey was undertaken in July 2018.

(c) **Survey of Passes around Mauritius.** Based on requests from various stakeholders, the survey of passes around mainland Mauritius is under progress. As on date four phases have been completed and **a total of 21 out of 78 passes** and surrounding lagoons have been surveyed. The survey has been completed from Grande Riviere Noire Bay in South West to Cap Malheureux in North of Mauritius.

(d) The Unit has embarked upon the project of surveying along Eastern and Southern coast of Mauritius. These areas have never been systematically surveyed due to unsuitable weather and sea state. Till now, approximately 120 KM of sounding has been carried out.

(e) **Survey of Rodrigues Island**. The maiden survey of Rodrigues by Mauritius Hydrographic Service commenced in March 2018 based on the requirements received from a number of stake holders. MHS has successfully completed the first two phases in Rodrigues which amounts to approximately 700 Km sounding. The survey at Rodrigues has given MHS the confidence to provide Hydrographic Support to the outer islands as well.

(f) **Survey in lagoons of Trou D'Eau Douce**. Mauritius Hydrographic Service has undertaken bathymetric survey in the lagoons of Trou D'Eau Douce along with surveys to ascertain the composition of seabed for the benefit of the Ministry of Tourism.

2.2. Surveys by Indian Naval Ships

Ten Joint Indo- Mauritian Committees have held since 2006 to discuss and finalise hydrographic tasks. So far, under the provisions

of the MoU, the Indian Authorities have deployed naval survey vessels almost each year since 2006 to undertake the agreed survey tasks. Through the Joint Surveys undertaken with the Indian Naval Hydrographic Department a total of 26 hydrographic surveys have been completed in the last Eleven years , 07 navigational charts and 09 ENC cells have been published. Each ship has been deployed in our waters for an average duration of 30 days. INS Sarvekshak was the 11th Hydrographic Survey ship to undertake multidisciplinary surveys in the Mauritian waters. The ship completed detailed surveys of ocean areas in the South East of Mauritius in order to progress the charting scheme agreed between Republic of India and Republic of Mauritius. Apart from carrying out the core assigned tasks, the ship also collected oceanographic datasets as requested by multiple agencies in Mauritius, and provided training to officers from various ministries and organisation.

2.3. **Infrastructure and Equipment.**

The basic infrastructure available for undertaking Hydrographic surveys at Mauritius Hydrographic Service are listed below:-

(a) Inshore Survey Vessel "***Pathfinder***"

(b) Atlas Deso-30 Echo sounder with 210 KHz and 33 KHz Transducers

(c) Hemisphere R-131 Satellite DGPS.

(d) TSS Dynamic Motion Sensor 25.

(e) HYPACK software.

(f) Infinity-EM Current Meter.

(g) CARIS Processing Suite for Single Beam Sounding Procesing.

(h) Side Scan Sonar 4200 FS with Discover and Sonar wiz software

(i) CTD 48M Sound Velocity Profiler

(j) Precision Depth Recorders – PDR 601

(k) Differential GPS – Aquarius 5000 Series (Dassault Sercel)

(l) Teledyne Portable Single Beam Echo Sounder

3. **New Charts & Updates**.

The production and marketing of Mauritian charts is undertaken by National Hydrographic Office, India, under the provisions of MoU. All the seven chart of the Mauritian waters has been accorded INT status. The list of the charts are as follows: -

Sl No.	Chart No.	Name
1.	2514 (INT 7739)	Port Louis and Approaches to Port Louis.
2.	2503 (INT 77391)	Approaches to Cargados Carajos Shoals
3.	2504 (INT 77392)	Mathurin Harbour
4.	2505 (INT 77393)	Approaches to Mathurin Harbour
5.	2506 (INT 77394)	Grand Bay and Grand Riviere Noire Bay
6.	2507 (INT 77395)	Grand Port
7.	2512 (INT 77396)	Agalega Island

The catalogue of charts for Mauritius is being expanded from 7 to 14 charts as per the charting scheme finalised in consultation with National Hydrographic Office, India. The new charting scheme would significantly enhance the navigational safety in Mauritian waters. The additional charts would be as follows:-

Sl No.	Proposed Chart	Scale	Remarks
1.	Mauritius	1:125 ,000	
2.	Gabriel and Round Island	1: 50,000	Surveys undertaken by INS Darshak in 2016-17
3.	Point Sud Ouest (Le Morne)	1: 10,000	
4.	Souillac	1: 7,500	
5.	Approaches to Grand Port	1:30,000	Surveys undertaken by INS Sarvekshak in 2017-18
6.	Saint James Anchorage (Agalega)	1: 5,000	
7.	Rodrigues Island	1: 50,000	

4. **New Publications & Updates**. Mauritius Hydrographic Service has a long term plan to update and publish sailing directions for Mauritius by early 2019.

5. **MSI (Maritime Safety Information)**.

Mauritius is located in NAVAREA VIII where the NAVAREA Coordinator is India. A proposal for integrating existing MSIS infrastructure with NAVAREA warnings is presently under implementation in coordination with Shipping Division of Ministry of Ocean Economy, Marine Resources, Fisheries and Shipping.

6. **C-55**

The updated copy of C 55 is being forwarded along with this report which was compiled in March 2018.

7. Capacity Building

7.1. Training Received and Needed

7.1.1 Training Received

(a) A number of Officer's from this ministry have undergone CAT 'B' Hydrographic courses in India, Holland, and Japan.

(b) Two officers have undergone CAT 'A' course at Mississippi, United States of America

(c) One Officer has undergone course at GEBCO Ocean Bathymetry Course, at University of New Hampshire, USA (from August 16 to September 2017).

(b) One Officer (Survey Technician) from Mauritius Hydrographic Service has recently undergone a Diploma certification course at the National Institute of Hydrography, Goa, India in January 2018.

(c) Officers of this Ministry have also benefited from several short courses including training in Marine Cartography and ENC at United Kingdom, Kenya and South Africa, course in Maritime Safety Information (MSI) in Oman, Tidal and Water Levels workshop inSouth Africa and IHO Phase I skills Training Course in Namibia.

(d) Eight officers have followed multi-beam courses in Australia, Germany and India.

(e) Three officers have undergone training in Maritime Boundary Delimitation in Maldives and South Africa.

(f) On job training has been provided on-board Indian Navy ships during each survey mission.

(g) In-house training is being provided by Mauritius Hydrographic Service during conduct of surveys.

7.1.2 **Training Needed**

Additional training requirements exist in following areas: -

(a) Nautical Cartography (Paper Chart and ENC)

(b) Course for Survey Technician planned at National Institute of Hydrography, India.

7.2. Status of Bilateral Capacity Building Programme

Under the existing MoU on hydrography, the Government of India has deputed a Hydrographic team to set up hydrographic infrastructure in Mauritius. The functions of this team are as follows:-

(a) Prepare and regulate long-term program of hydrographic surveying and charting of Mauritian Waters.

(b) Carry out specialized survey with other government departments such as Oceanographic, Fisheries, Meteorological and Port authorities.

(c) Supervise and provide advice for any hydrographic survey work carried out by a private contractor.

(d) Represent Government of Mauritius at International and regional level on Hydrographic matters.

(e) Act as focal point and repository for hydrographic and nautical information.

(f) Coordinate training facilities at national and international level for hydrographic surveying and technicians

(g) Recommend national policy and take steps for improvement of hydrographic survey services.

8. **Oceanographic Activities**.

The Mauritius Oceanography Institute (MOI) advises Government on the formulation and implementation of policies and programs in respect to oceanography and marine resources. Mauritius Hydrographic Service also works in close collaboration with MOI for providing assistance in the collection of certain oceanographic Data like Sound Velocity Profiles, ocean Current Parameters, nature of seabed etc. The Mauritius Meteorological Service is responsible for the maintenance of tide gauges and production of tide tables in Mauritius. The following tide stations are in use:

Locations	*Digital Tidegauges*	*Installation*	*Sensors used to measure sea level*	*GPS Positions*
Port Louis *(Trou Fanfaron)*	Sutron SatLink Logger	14 March 2008	Encoder, radar, pressure	20^0 09.434' South, 57^0 30.256' East
Port Louis *(Trou Fanfaron)*	Vaisala (MAWS 301)	May 2005	Encoder, radar, pressure	
Blue Bay	Sutron SatLink (XLITE 9210)	29 November 2008	Radar, pressure	20^0 26.650' South, 57^0 42.655' East
Rodrigues *(Port Mathurin)*	Sutron SatLink Logger	8 March 2008	Encoder, radar, pressure	19^0 40' South, 63^0 25' East
Agalega *(La Fourche)*	Sutron SatLink (XLITE 9210)	22 November 2008	Radar only	10.346^0 South, 56.586 East

9. **Other Activities**

9.1.1 **GIS Platform for Marine Spatial Planning**. The information collected by the Indian Hydrographic ships for the last 12 years has been compiled in the form of nautical charts. Additionally, Mauritius Hydrographic Service has carried out numerous surveys in the near shore areas for meeting requirements of various stakeholders. The above data and information has been shared with the Department of Continental Shelf, Maritime Zones and Administration for implementing GIS Platform for Marine Spatial Planning, which would be useful for all concerned stakeholders of oceanic domain in future.

9.1.2 **World Hydrography Day 2018 Celebrations**. The World Hydrography Day was celebrated from 02 – 04 Jul 2018 at Port Louis harbour and Mahebourg with the theme as promulgated by IHO **"*Bathymetry - the foundation for sustainable seas, oceans and waterways*".** The opening ceremony was held on board **Coast Guard Ship Barracuda.** The Honourable Purmanund JHUGROO Minister of Housing and Lands was the chief guest. Dignitaries from various Ministries and several stakeholders associated with maritime safety and security, Coastal Zone Management, oceanographic research, environmental protection and port operations were invited for the opening ceremony to showcase hydrographic assets and recent work carried out by the Unit. Shri K D Dewal, the Acting High Commissioner of India to Mauritius also attended the event. During the event the Logo of Mauritius Hydrographic Service was unveiled by the Honourable Minister. Sea-sortie was organised on-board MCGS Barracuda for all the visiting dignitaries to showcase the importance of Nautical products developed by Hydrographers. Open days were organized for students, public officers and public at large on 02 & 03 July which also included a sea sortie on-board Fast Interceptor Boat and visit to ISV Pathfinder. In addition the maiden Hydrographic exhibition was organised at Mahebourg to spread awareness on Hydrography in the

Southern Part of Mauritius on 04 Jul 18. The event was attended by Honourable Purmanund JHUGROO, Minister of Housing and Lands (chief guest) and Honourable Mahendranuth Sharma HURREERAM, the Government Chief Whip apart from various senior dignitaries from the district.

9.1.3 **CAPAM Award**. Mauritius Hydrographic Service has participated in the Commonwealth Association for Public Administration and Management (CAPAM II A) in Apr 18 and has been selected in the Semi-Final round under the category "Innovation Incubation". The final results of the winner in this category are awaited. The Office has also participated in the National Productivity and Competitiveness Council, the results of which would be declared in August this year.