



NATIONAL REPORT - MAURITIUS

(As on 08 Mar 18)

REPUBLIC OF MAURITIUS



18TH MEETING OF NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION

Goa, India

09-12 April 2018

1. **Hydrographic Office and Services**

1.1. **Introduction**

Mauritius is an Island nation of 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.

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**

Hydrographic Unit was established at Ministry of Housing and Lands in November 2013. As a result, Mauritius now has 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 for supporting economic/ tourism related activities. In addition, significant progress has been made towards hydrographic support for scientific research & disaster management, sale of updated nautical products and developing expertise in matters related to maritime domain. The Hydrographic Unit at Mauritius 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.

(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 the Hydrographic Unit commenced in March 2018 based on the requirements received from a number of stake holders. *(status to be updated prior to the NIOHC meet)*

(f) **Survey in lagoons of Trou D'Eau Douce**. The Hydrographic unit 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.



Figure 1 Joint Survey undertaken by INS Sarvekshak for publication of chart "Approaches to Grand Port"

2.3. **Infrastructure and Equipment**

The basic infrastructure available for undertaking Hydrographic surveys at Hydrographic Unit 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 Processing.
- (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: -

<u>Sl No.</u>	<u>Chart No.</u>	<u>Name</u>
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:-

<u>Sl No.</u>	<u>Proposed Chart</u>	<u>Scale</u>	<u>Remarks</u>
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.** The Hydrographic Unit 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 the Hydrographic unit 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 in South 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 the Hydrographic Unit 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 at National Institute of Hydrography, India.

(c) On-job training for hydrographic surveys and chart production.

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. The Hydrographic Unit 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 ^o 09.434' South, 57 ^o 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 ^o 26.650' South, 57 ^o 42.655' East
Rodrigues (Port Mathurin)	Sutron SatLink Logger	8 March 2008	Encoder, radar, pressure	19 ^o 40' South, 63 ^o 25' East
Agalega (La Fourche)	Sutron SatLink (XLITE 9210)	22 November 2008	Radar only	10.346 ^o 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, the hydrographic unit 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.