

# Ministry of Housing and Land Use Planning Mauritius Hydrographic Service



**Devendra Madhow  
Hembal Teckmun**

# SCOPE



**Introduction**

**Affiliation to International Organisations**

**Cooperation with India**

**Survey Planning**

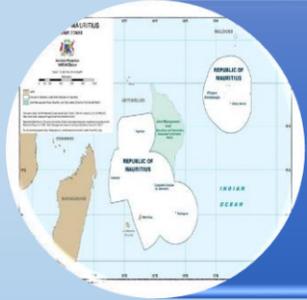
**Surveys Undertaken**

**Capacity Building & Training**

**Awards and Recognition**

**Future Plans**

# INTRODUCTION



**Large EEZ**



**Safety of Navigation**



**Ocean Based Economy**



**Hydrographic Services under MHLUP**

# AFFILIATION TO INTERNATIONAL ORGANISATIONS



**International Hydrographic Organisation (IHO),  
since August 2005**



**Southern African and Islands Hydrographic  
Commission (SAIHC), since August 1996  
*(Presently Vice Chair)***



**North Indian Ocean Hydrographic Commission  
(NIOHC), since Feb 2009**

# MAURITIUS HYDROGRAPHIC SERVICE (MHS)



## MISSION STATEMENT

*“To provide credible hydrographic services in Mauritius through indigenous capacity building for efficient & safe maritime transport, management of coastal zone, exploration & exploitation of marine resources, tourism, environmental protection and scientific research.”*

**Established : November 2013**

**Parent Org. : Ministry of Housing and Land Use Planning**

**Office : Ebene, Mauritius**



# OBJECTIVES OF MHS



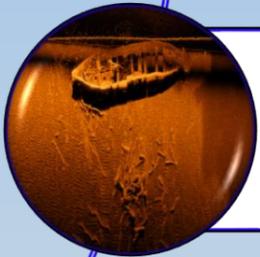
**Surveys of Areas Critical for Shipping**



**Surveys of Lagoons & Passes**



**Support for Development Projects in Oceanic Domain**



**Underwater Search Operations**



**Coordination with Hydrographic Organizations**

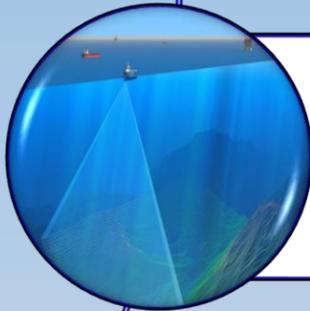
# OBJECTIVES OF MHS



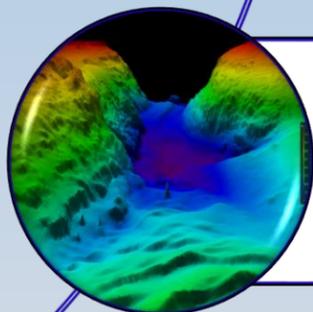
**Updated Information for Maritime Safety**



**Training of Surveyors and Officers from Stakeholder Organisations**

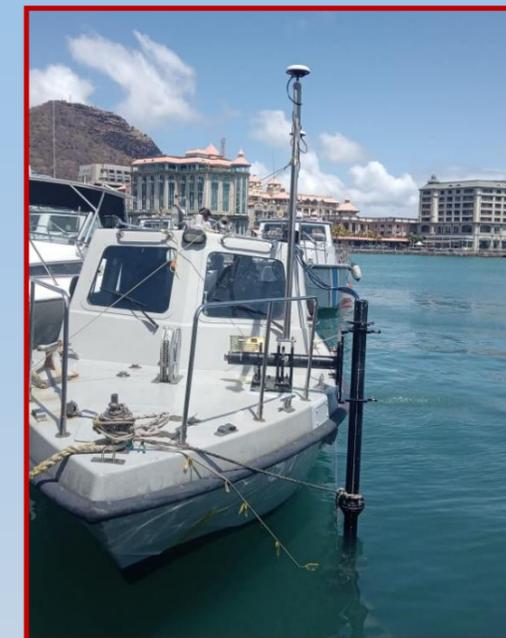
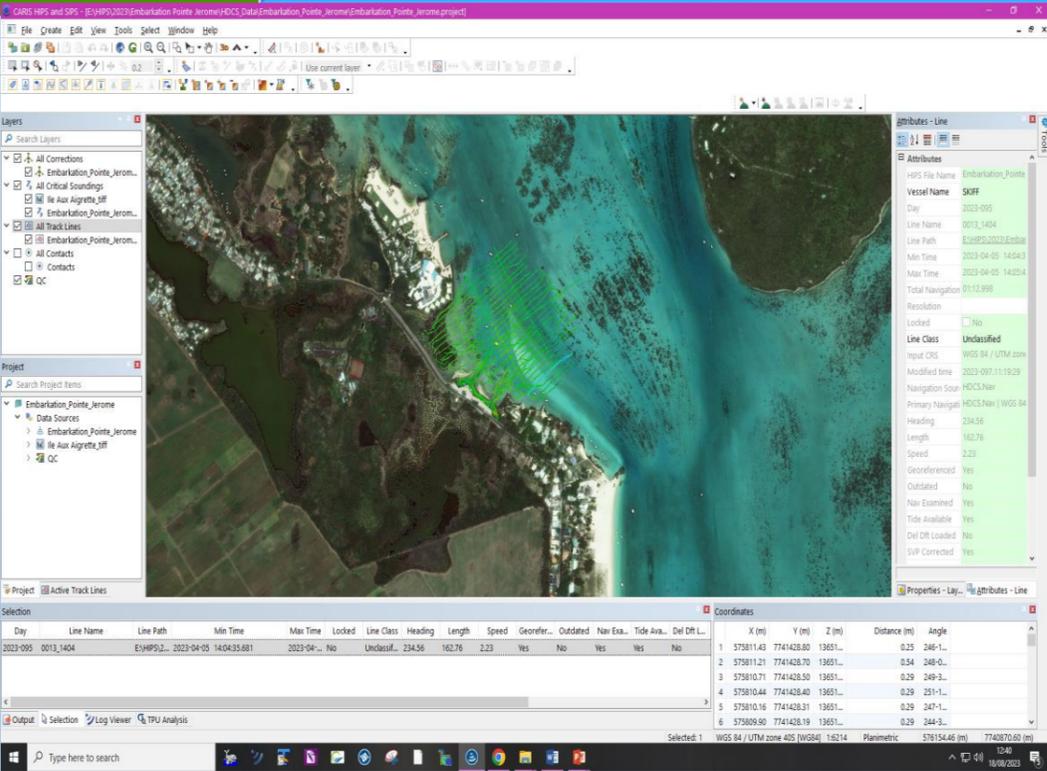


**Co-ordinate Deep Sea Surveys with *INHD* under the Provisions of MoU**



**Provide Technical Advice in the Related Disciplines**

# Procurement of Equipment and Software



## CARIS Software Suites



## Commissioning of Multi Beam Echosounder System

Automatic Tide Gauge

Sound Velocity Profiler

# RESOURCES HELD



**Multi-Beam Echo Sounder System**

**Single Beam Echo Sounder**

**Sound Velocity Probe**

**GPS**

**Dynamic Motion Sensor**

**Current Meter**

**Automatic Tide Gauge**

**Hypack**

**Sonar UI/Hysweep**

**Discover**

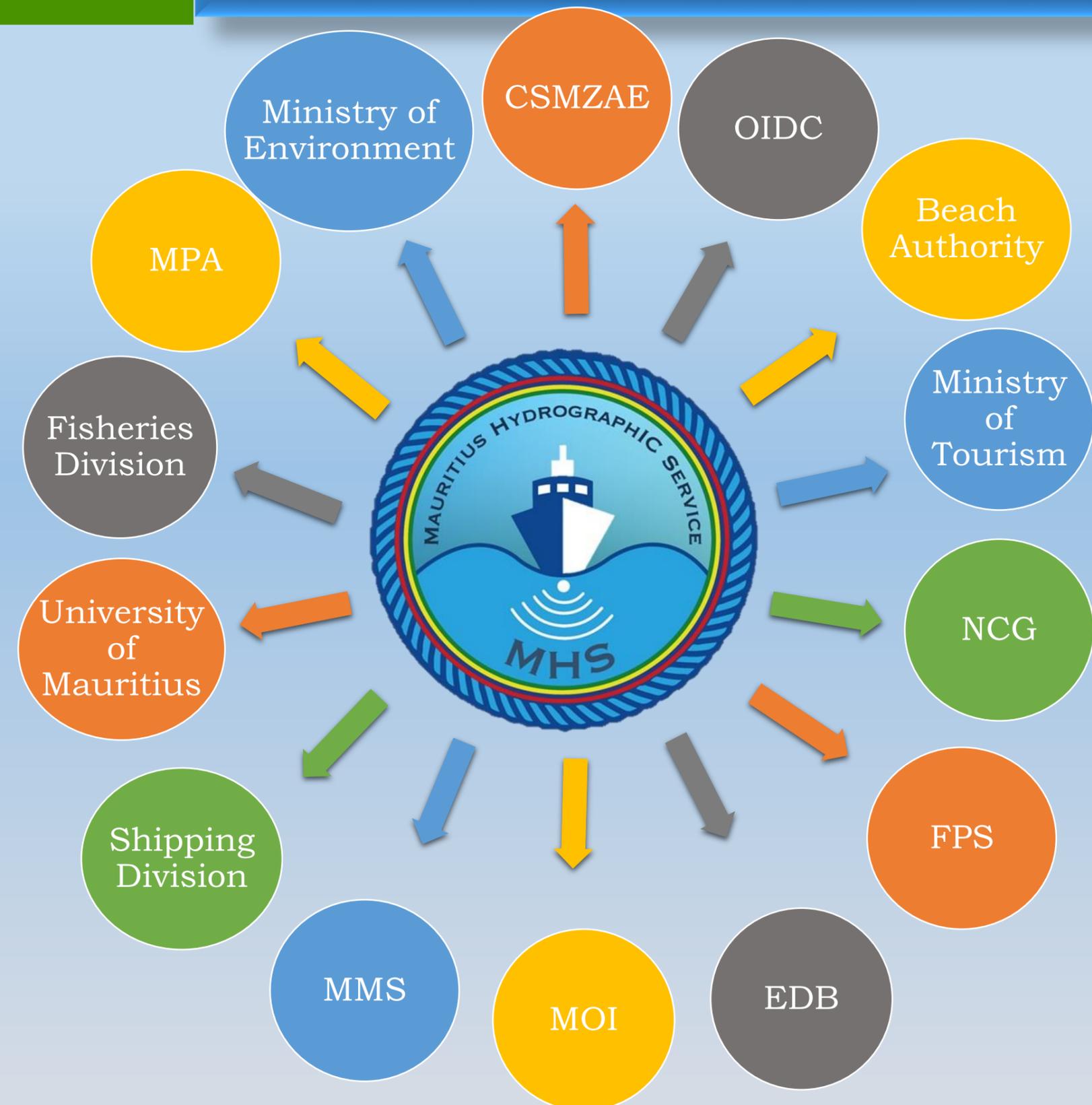
**Caris BDB, HIPS/SIPS, Paper Chart  
Composer**

**Sonar Wiz**

**Trimble Business Center**

**Global Mapper**

# NATIONAL STAKE HOLDERS

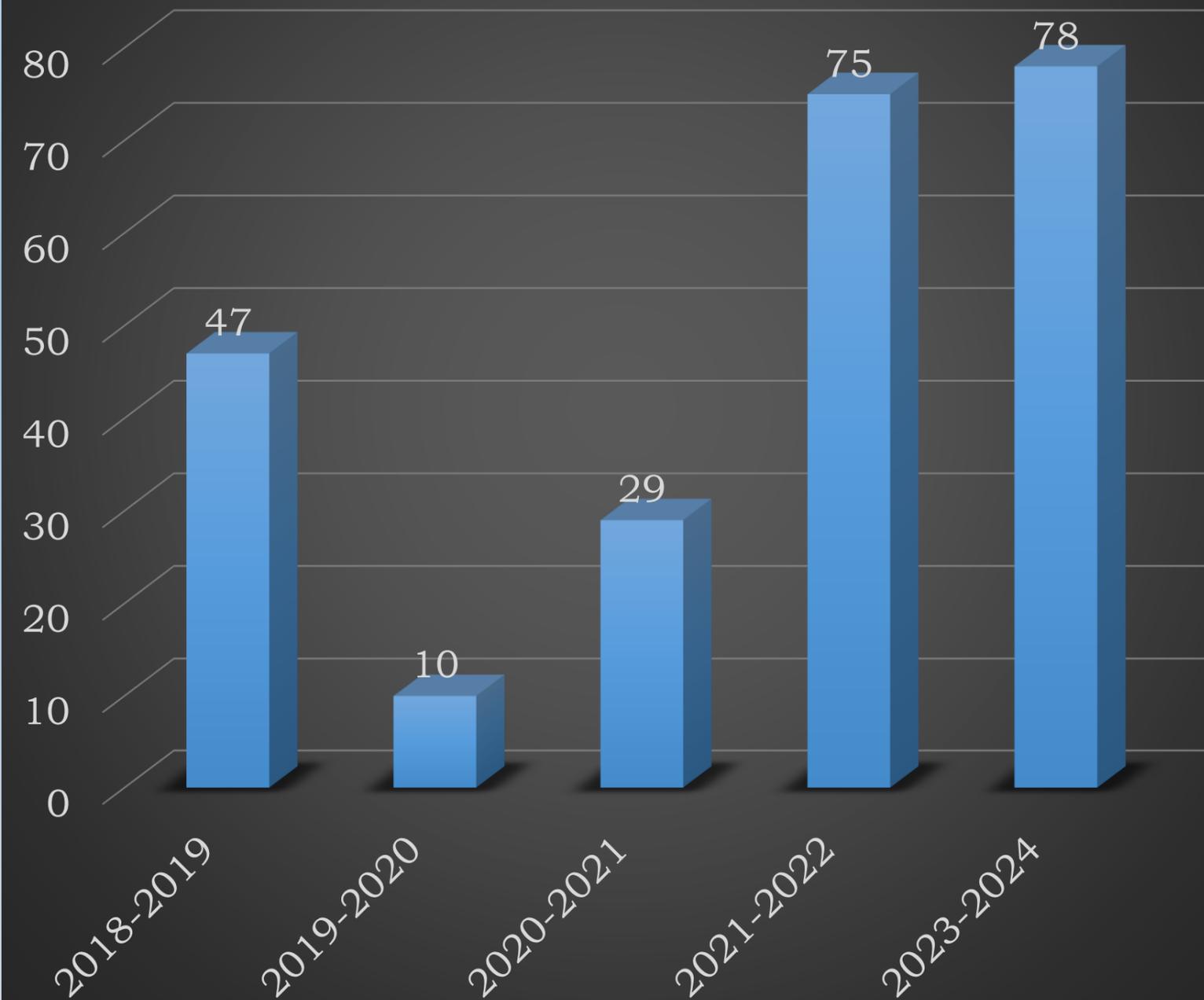


- **CSMZAE** Department for Continental Shelf, Maritime Zones Administration & Exploration
- **OIDC** Outer Island Development Corporation
- **NCG** National Coast Guard
- **FPS** Fisheries Protection Service
- **EDB** Economic Development Board
- **MOI** Mauritius Oceanography Institute
- **MMS** Mauritius Meteorological Services
- **MPA** Mauritius Ports Authority

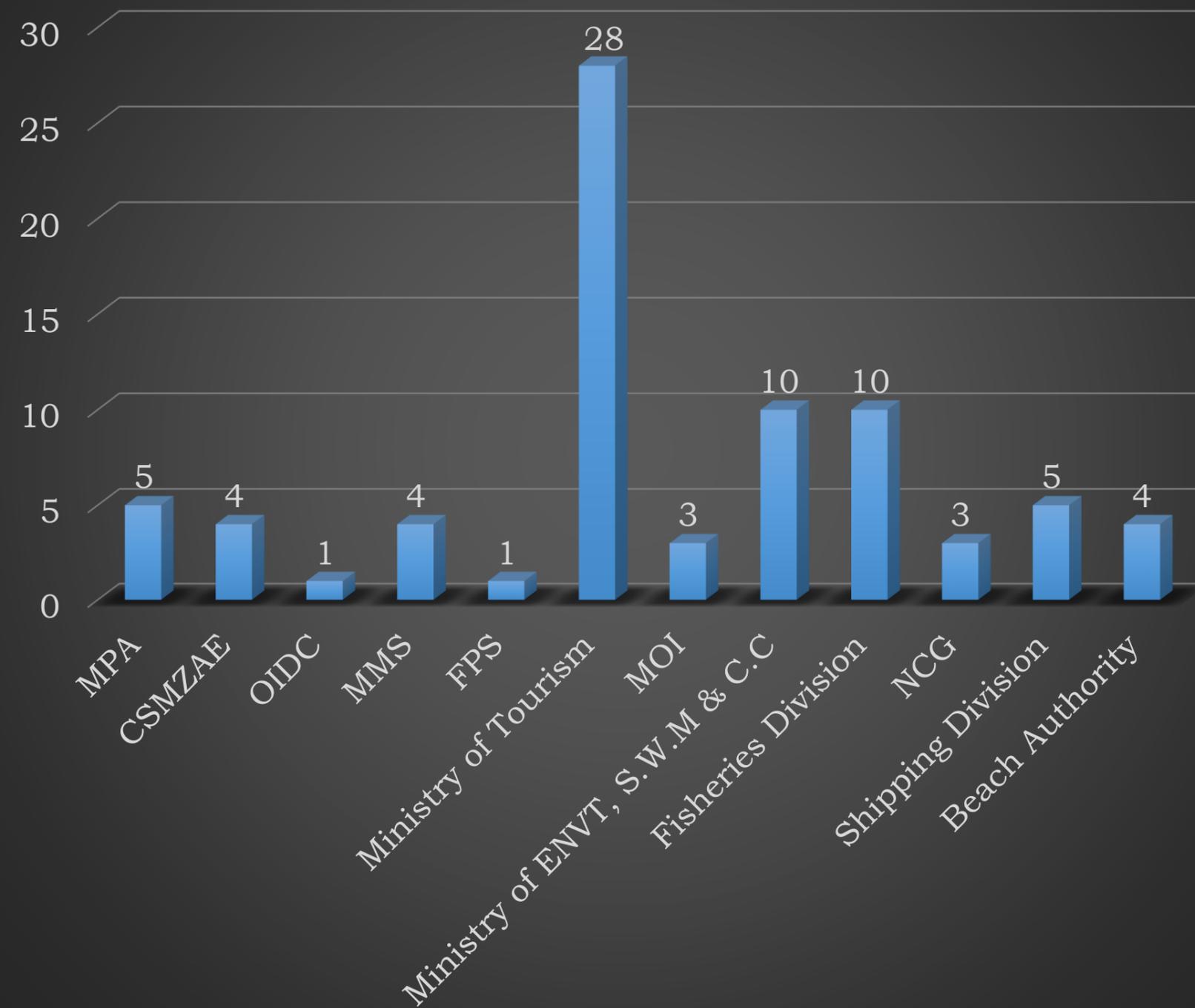
# SURVEY REQUIREMENTS



## Survey Requirements by National Stakeholders Block Year



## Breakdown of Hydrographic Requirements 2023-2024 (78 Surveys)



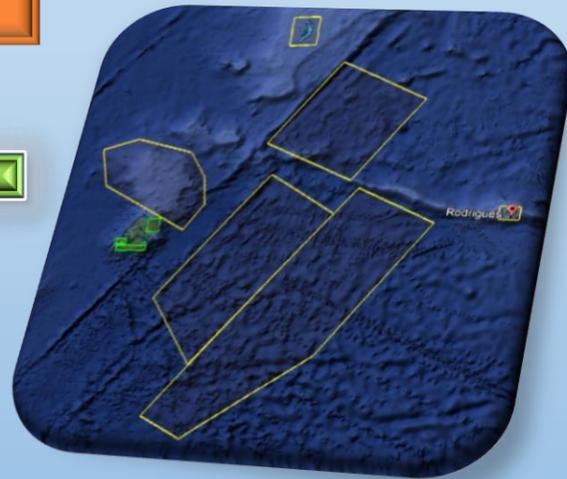
# PLANNING AND RESOURCE ALLOCATION



Deep Water Surveys

Survey Area Closer to Coast

Survey Area Inside Lagoon



# SURVEYED BY INDIAN NAVAL SHIP



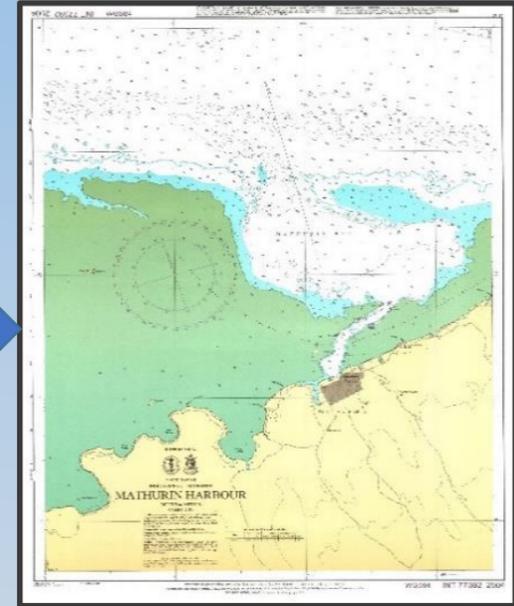
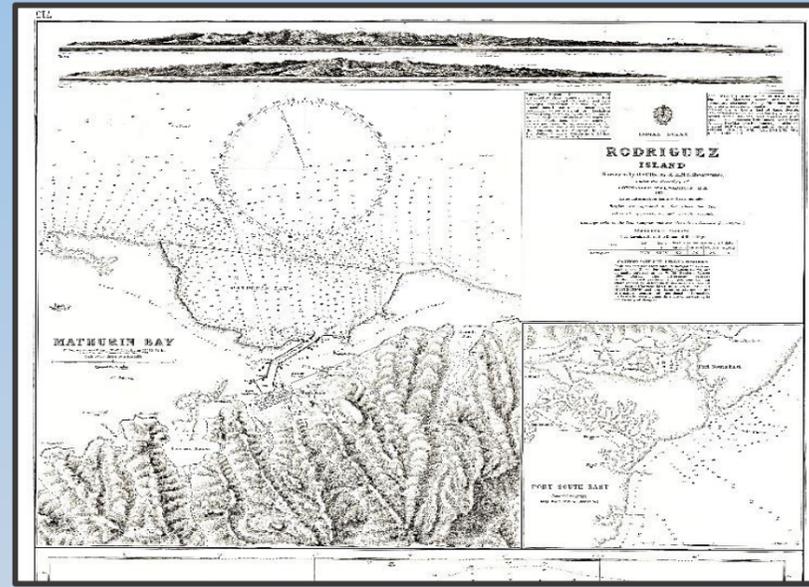
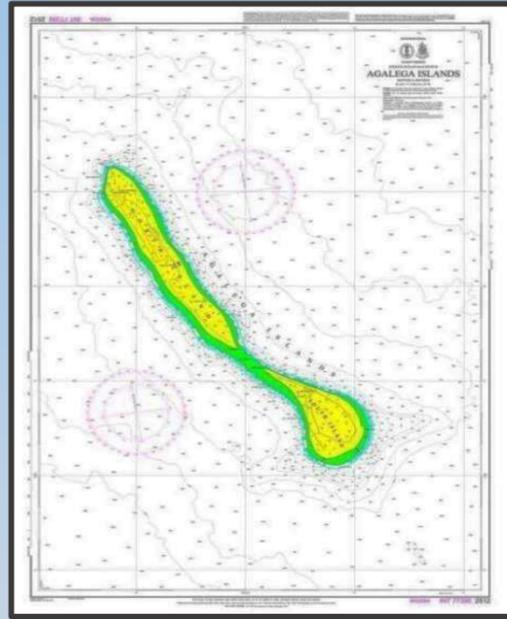
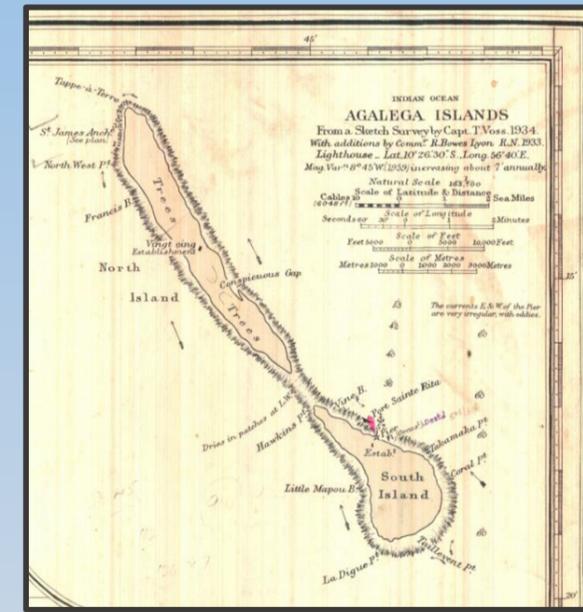
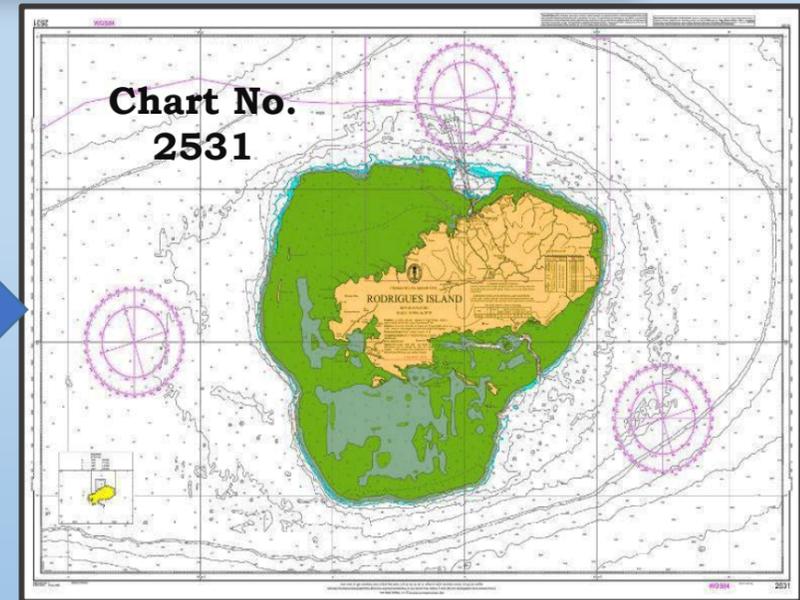
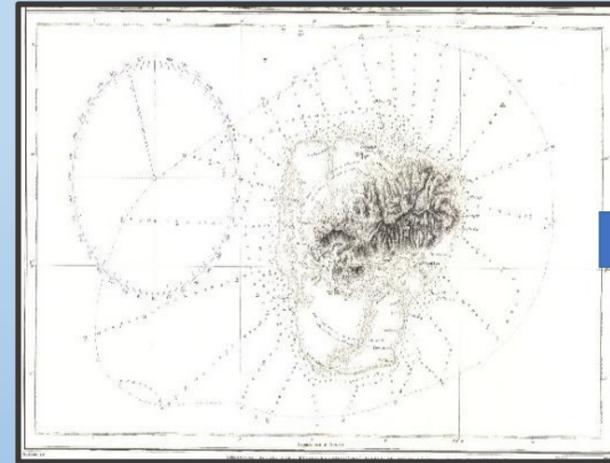
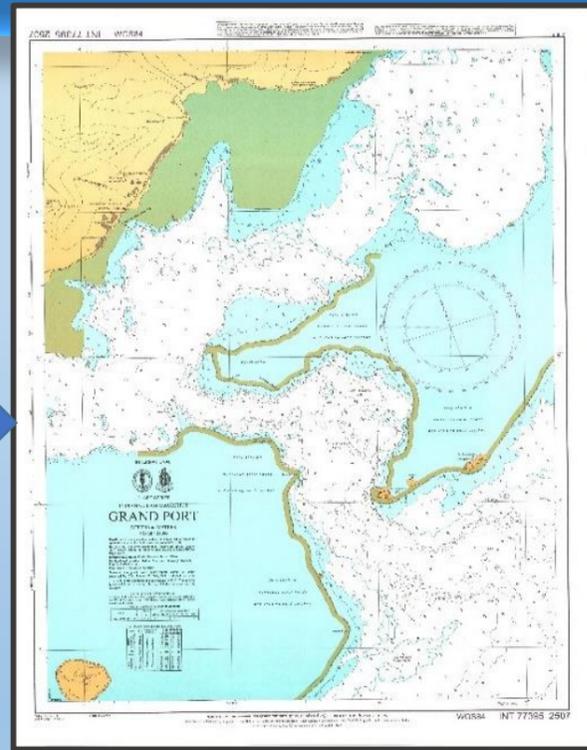
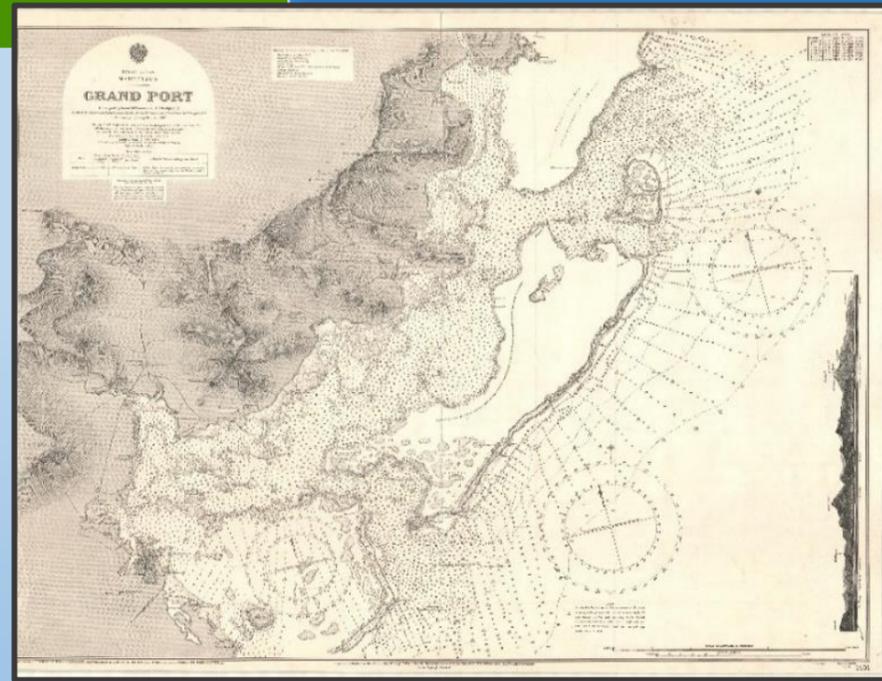
**Indian Naval Ship Darshak Deployed for a Period of 45 Days from 31 October to 15 December 22**



**Six Major Surveys Undertaken 6000Km<sup>2</sup>(3000Miles) sounding**

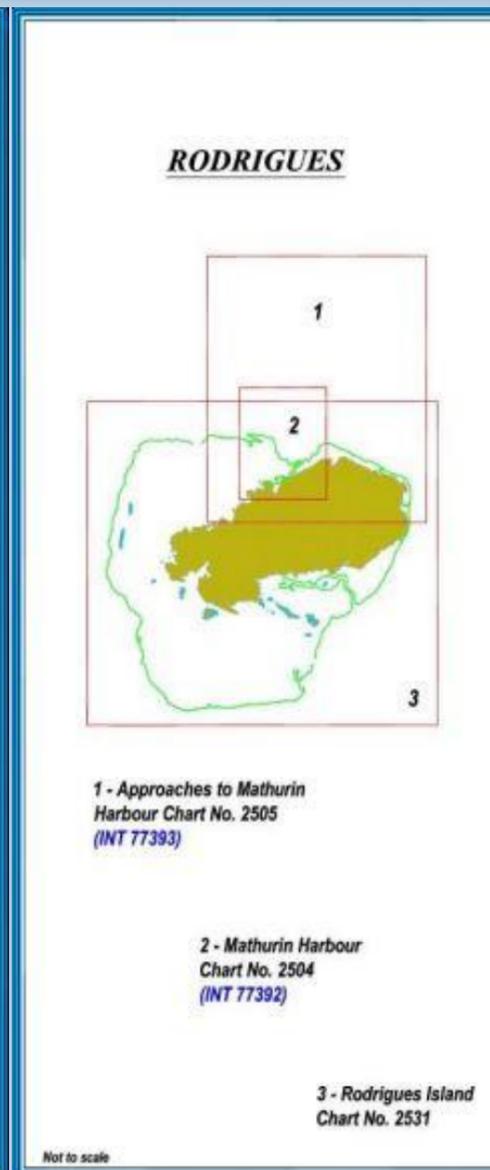
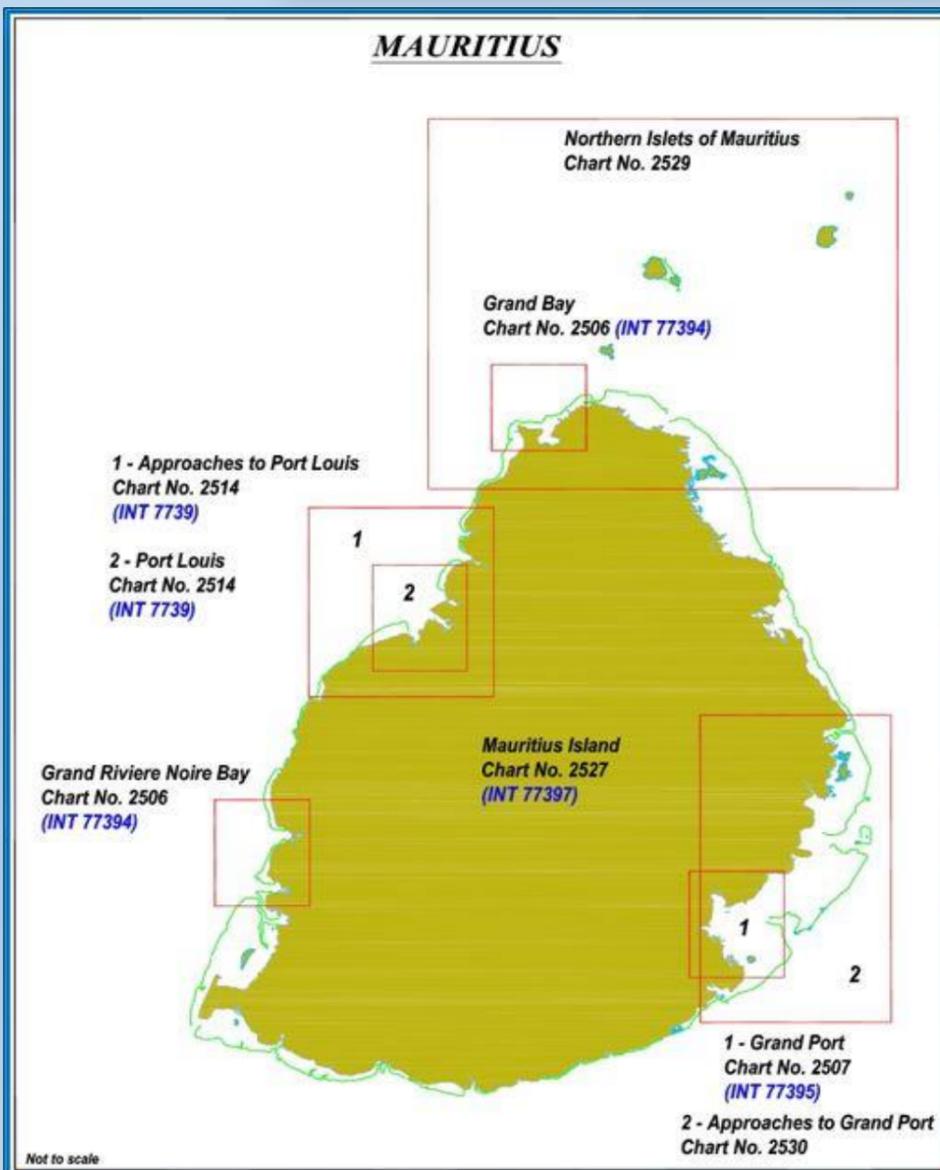
- **East of Mauritius**
- **Approaches to St Raphael Anchorages at St Brandon**
- **East of Mauritius out side the reef**
- **South Coast of Mauritius**
- **Agalega Jetty**
- **11 FADs around Mauritius**

# CHARTING - REPLACEMENT OF OLD NAVIGATIONAL CHARTS



Old nautical charts more than 120 years old

# NAVIGATIONAL CHARTS AND ENC<sub>s</sub>



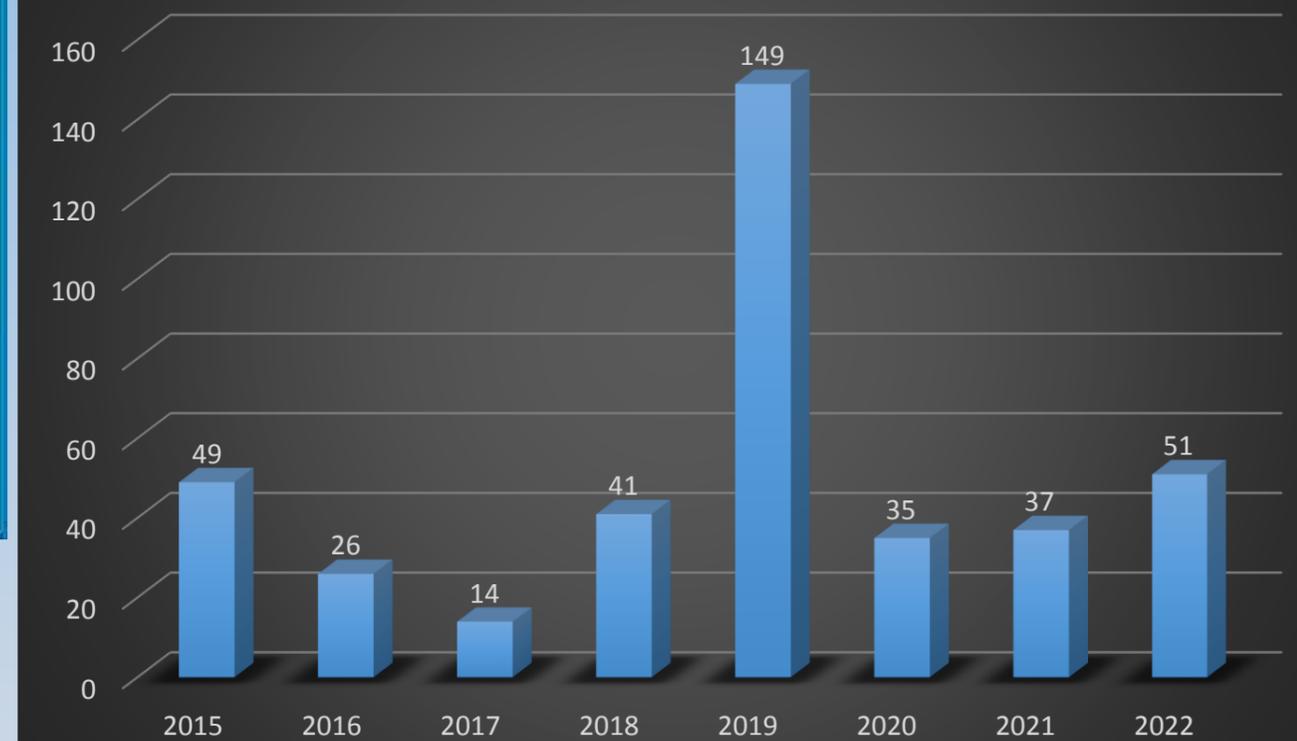
## ENCs and Paper Charts

Collaboration with  
National Hydrographic Office  
India

**Electronic Navigation Charts - 14**

**Navigational Paper Charts - 12**

### Sale of Navigational Charts Data



# UNDERWATER SEARCH CAPABILITY



**DEPLOYING SIDE SCAN SONAR FOR MISSING FISHING BOAT**

# STAKEHOLDER – MAURITIUS PORT AUTHORITY



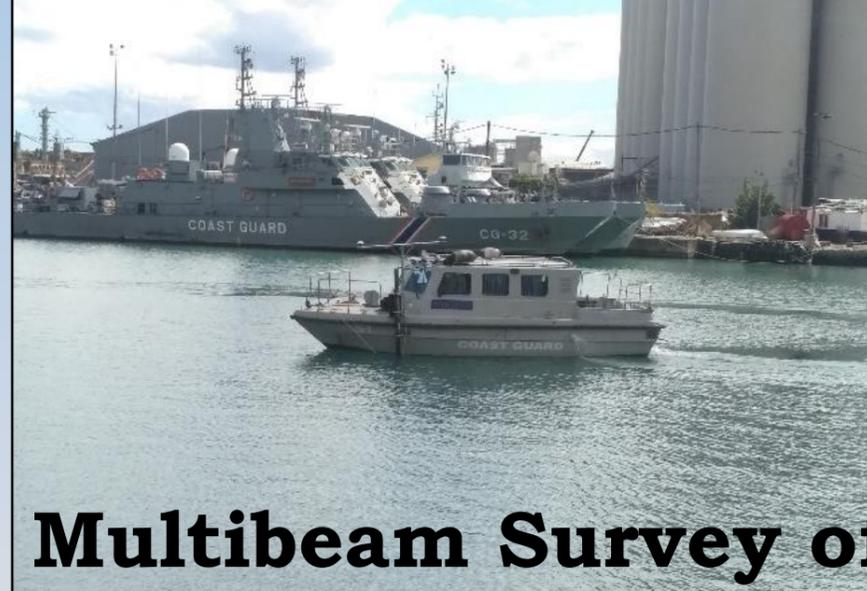
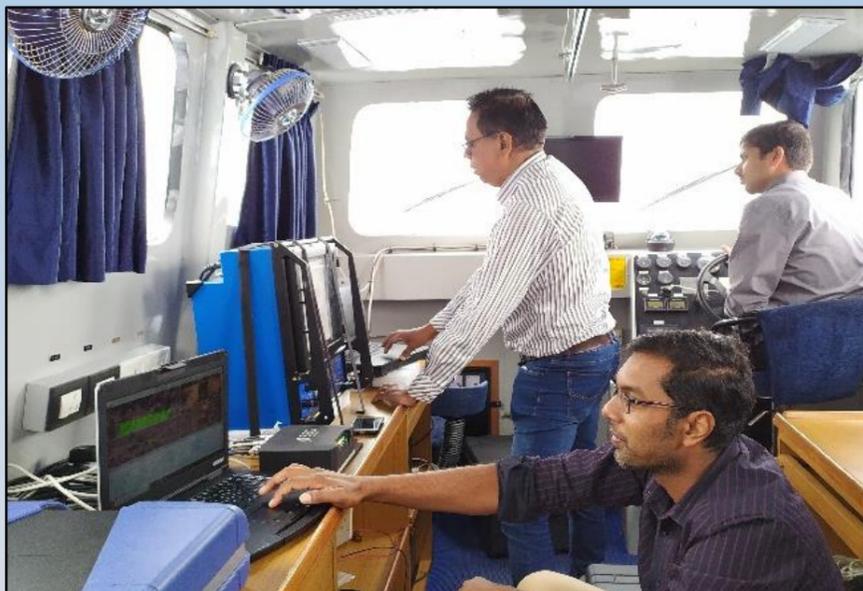
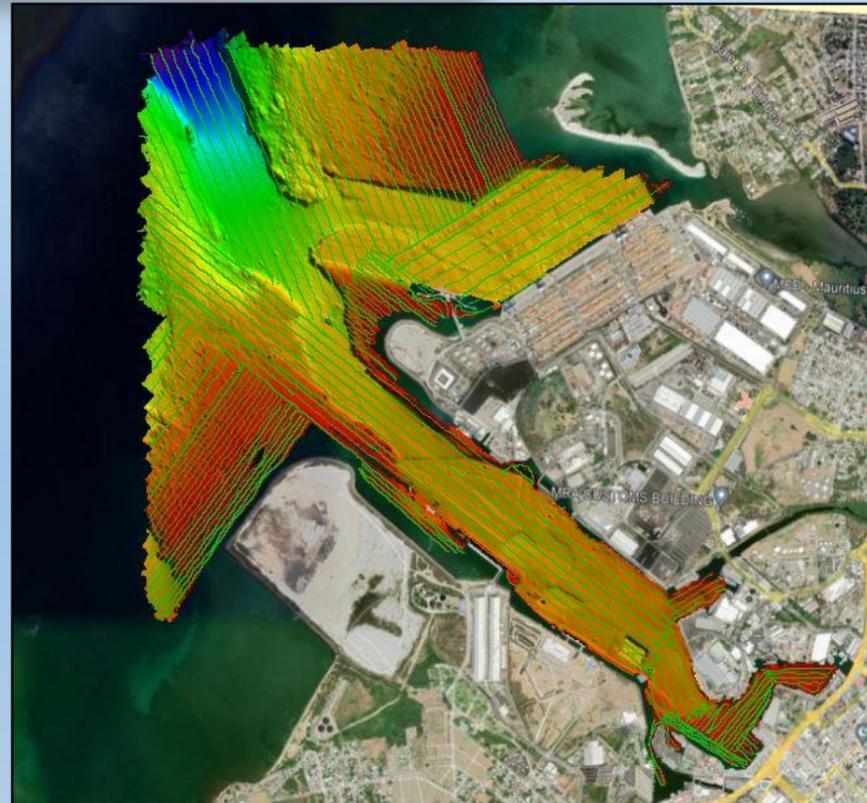
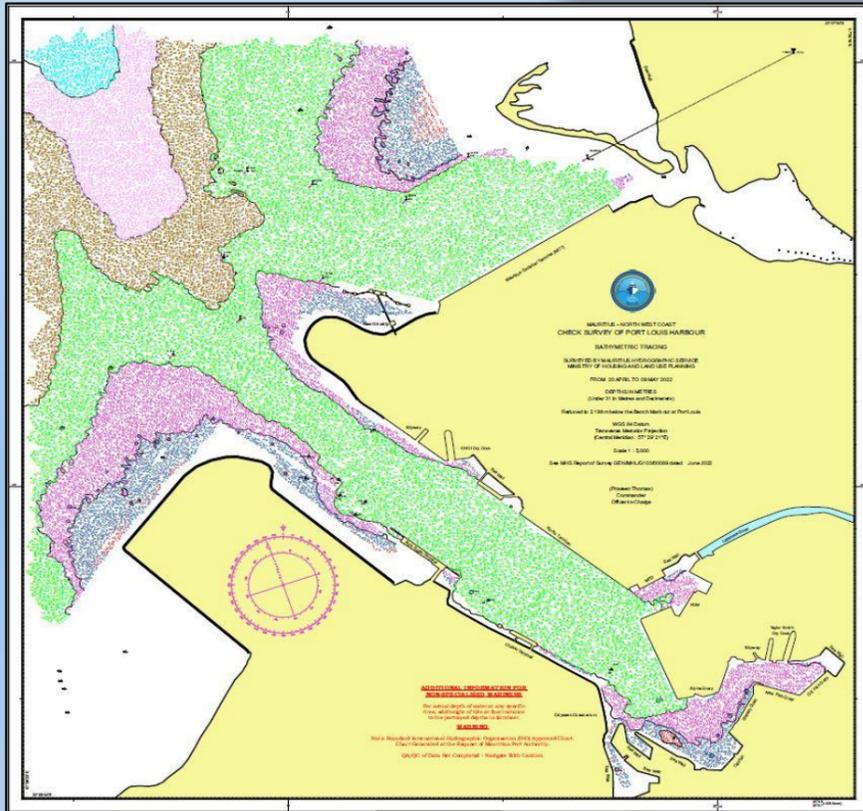
## Survey

## Project

### Mauritius Ports Authority

#### Aim:

- Report on Bathymetric Changes in the Channel :
  - Following Cyclonic Waves and Swells;
  - Prolonged Cargo Spillage During Discharging Operations; and
  - Siltation from the River

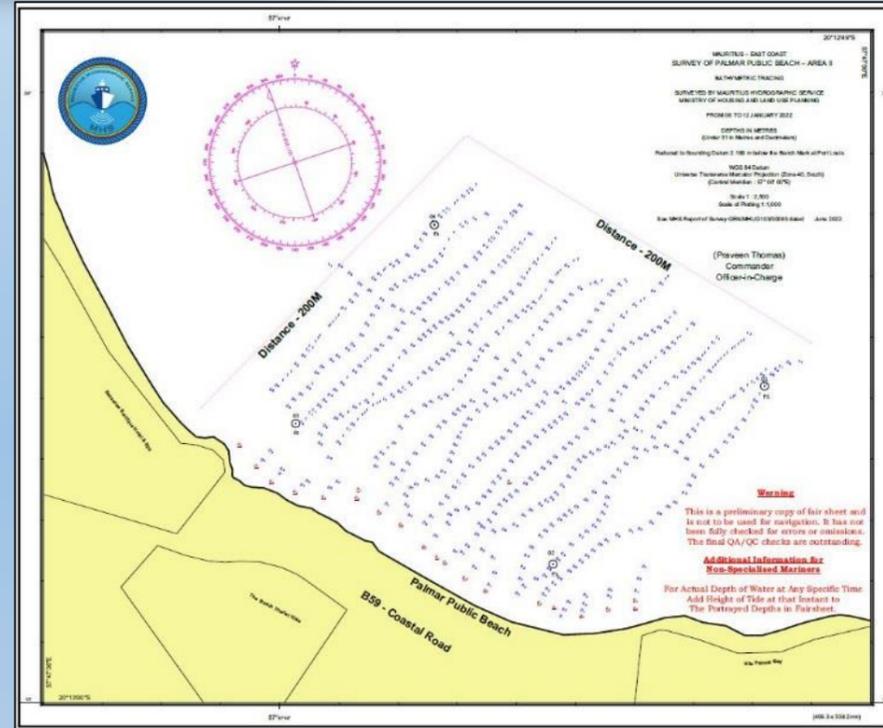


**Multibeam Survey of Port Louis Harbour**

# STAKEHOLDER – MINISTRY OF TOURISM / BEACH AUTHORITY



## Survey



## Project

### The Ministry of Tourism and Beach Authority

- Request for Hydrographic Survey and Derived Products
- Resulted in:
  - 17 Swimming Zones
  - 4 Mooring Zones
  - 2 Prohibited Zones
  - 7 Speed Limit Zones
  - 1 Buffer Zone
  - 2 Ski Lanes
  - 3 Snorkeling Zones
  - 2 Dangerous Bathing Zones



**Bathymetry Survey for Demarcation of Various Safety Zones**

# STAKEHOLDER – TOURISM AUTHORITY



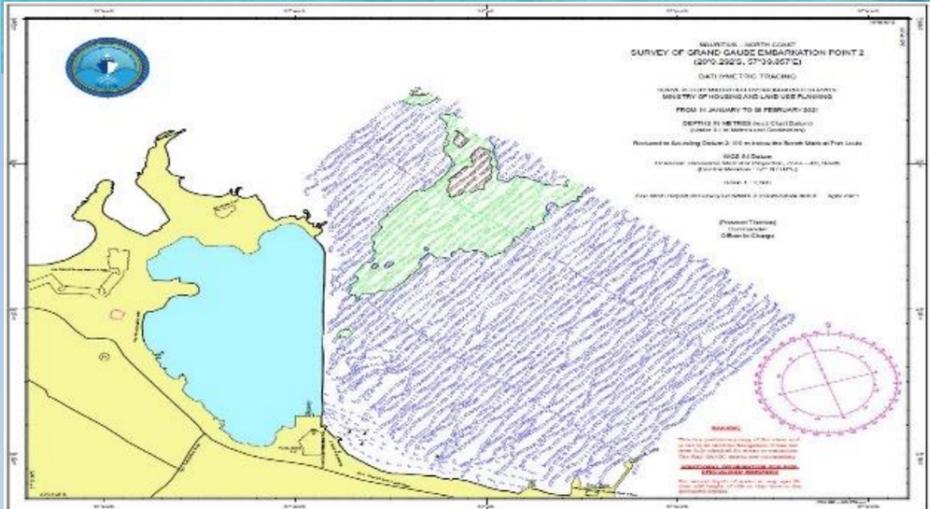
## Survey

## Project

**The Ministry of Tourism/Beach Authority/  
Fisheries Department**

**Aim:**

- Hydrographic survey and derived data for demarcation of embarkation points around the Island of Mauritius
- Facilitate Skippers of Tourist / Fishing Vessels to Embark and Disembark the Men and Material at the Designated Safe Points.

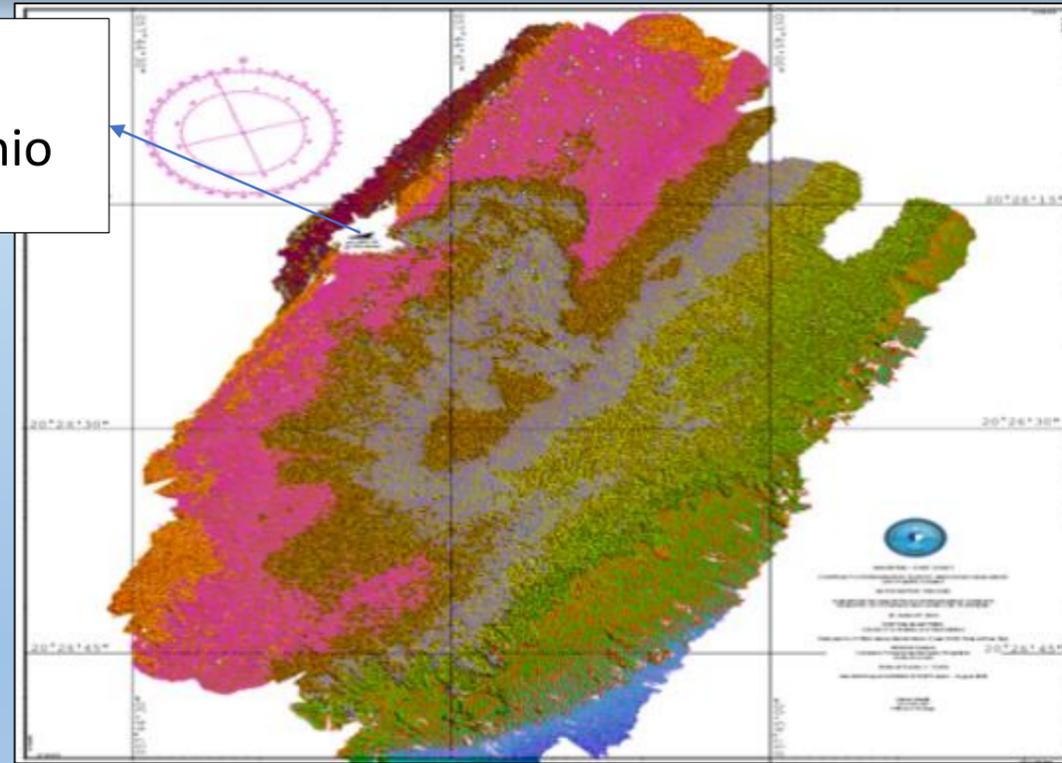


## Bathymetry Survey for Demarcation of the Embarkation Points

# SURVEY AROUND THE WRECK OF MV WAKASHIO



Wreck of  
MV Wakashio



**Survey of South East Coast ( Pte D'Esny)**

# STAKEHOLDER – MINISTRY OF BLUE ECONOMY



## Survey

## Project

### Ministry of Blue Economy, Marine Resources, Fisheries and Shipping

#### Aim:

- 96 Identified Navigable Passes Around the Island
- 32 out of 96 Passes Surveyed
- Bathymetry Data of Passes Being Used for Navigational Safety of Fishing and Pleasure Crafts
- Data Used by the Govt. for Demarcation of Navigable Channel Using Buoys for the Safety of Mariners



## Hydrographic Survey of Navigable Passes around Island of Mauritius

# STAKEHOLDER – FISHERIES DIVISION



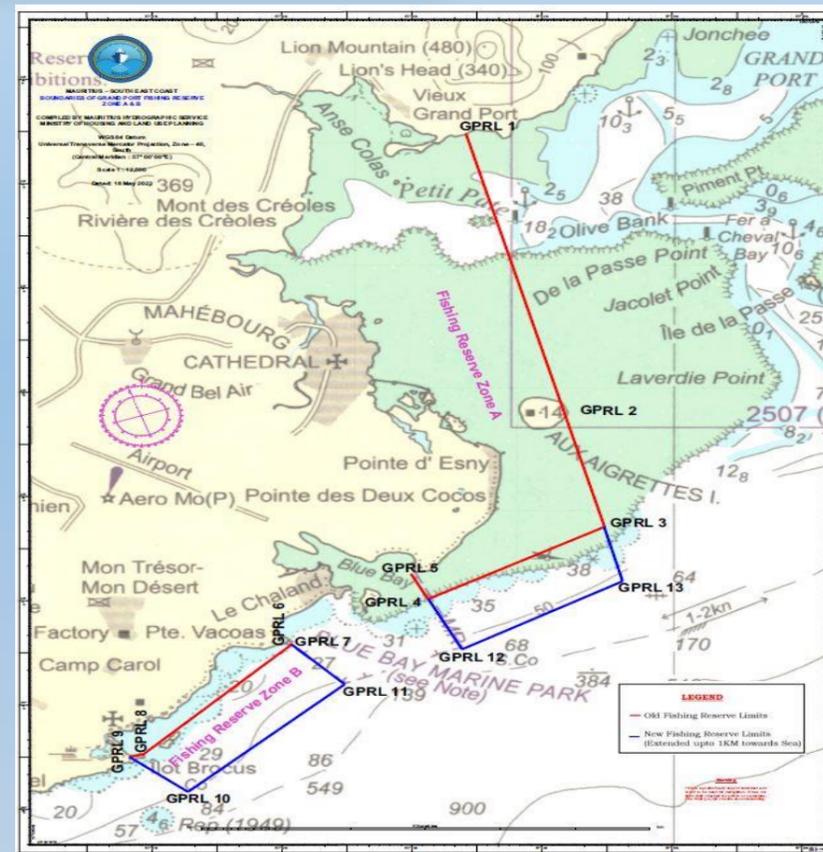
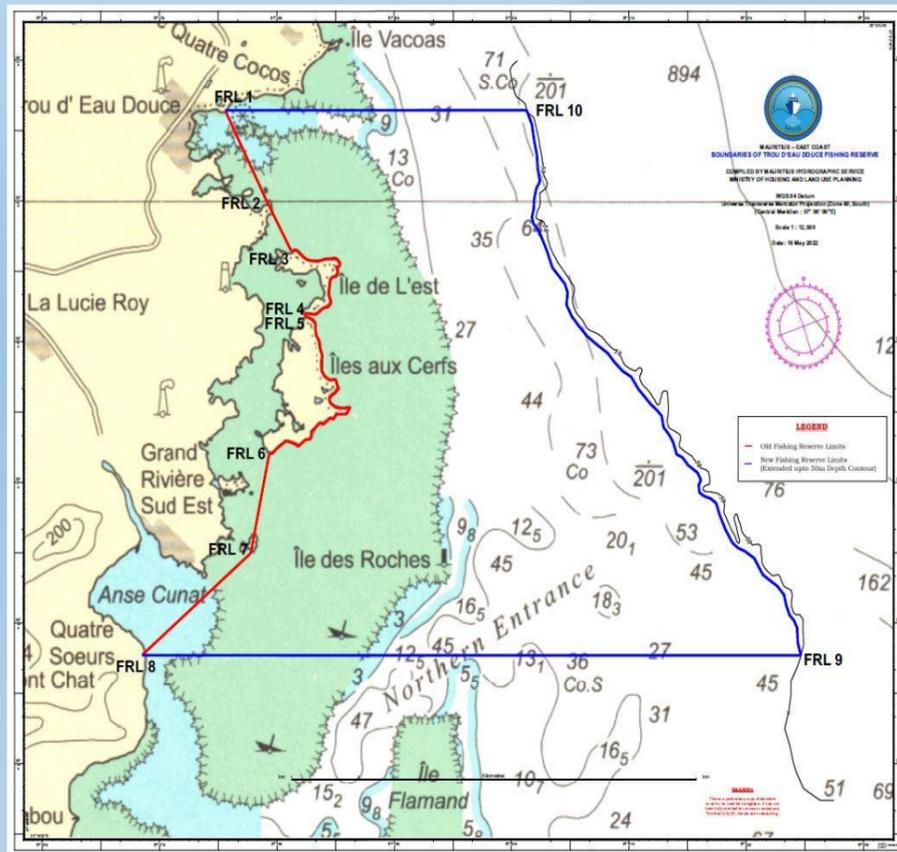
## Survey

## Project

**Ministry of Blue Economy, Marine Resources, Fisheries and Shipping**

**Aim:**

Carryout Mapping Exercise for Review of the Boundaries of Existing Fishing Reserves to Implement the UNDP Funded Mainstream Biodiversity Project.

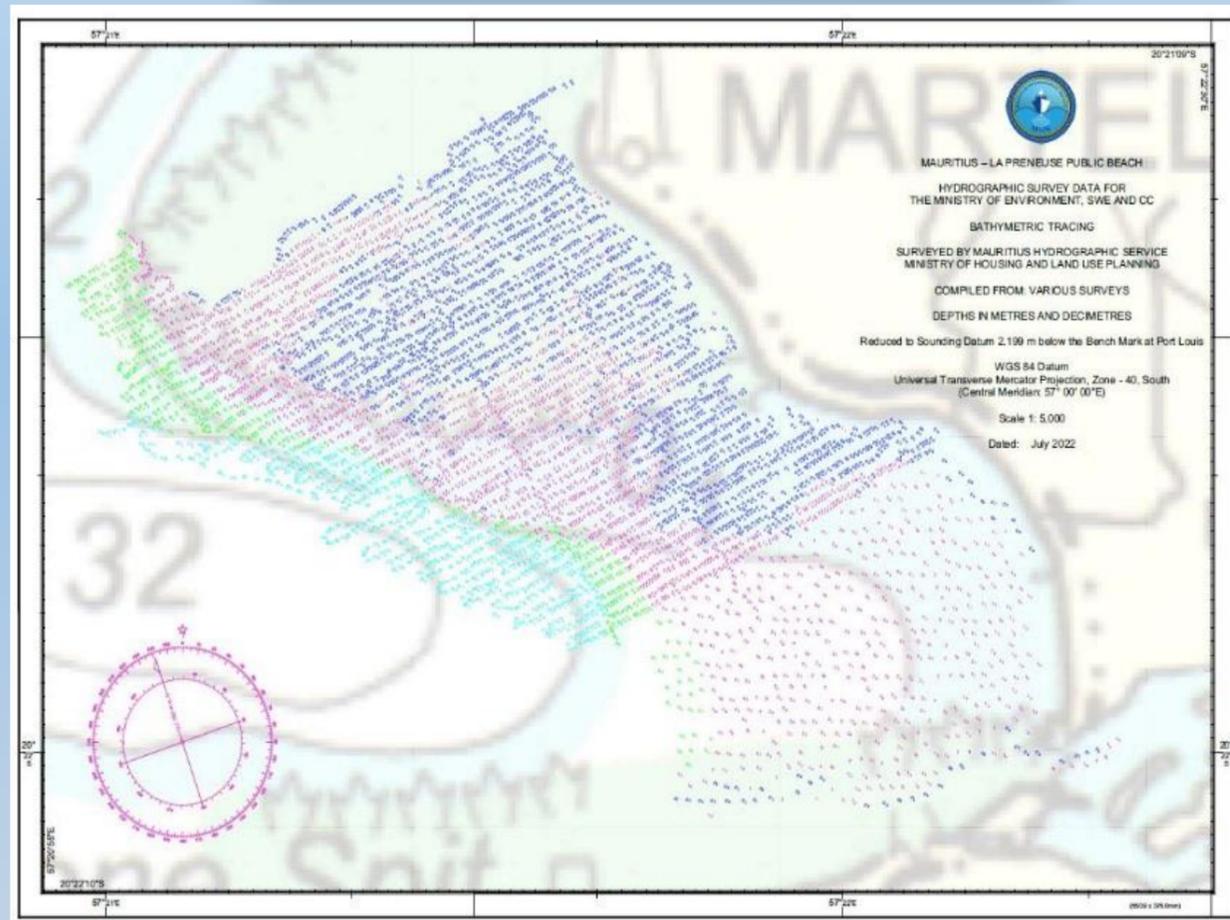


**Extension of Boundaries of Existing Fishing / Marine Protected Reserves**

# STAKEHOLDER – MINISTRY OF ENVIRONMENT



## Survey



## Project

### Ministry of Environment, Solid Waste Management and Climate Change

#### Aim:

- Coastal Protection, Landscaping and Infrastructural Works for Priority Eroded Sites around Mauritius
- Provided Bathymetry Assistance for projects related to Coastal erosion and to increase the resilience of beaches to the impacts of climate change

**Bathymetry Data for Coastal Protection Landscaping and Infrastructure Works**



# OUTER ISLAND



## Survey

## Project

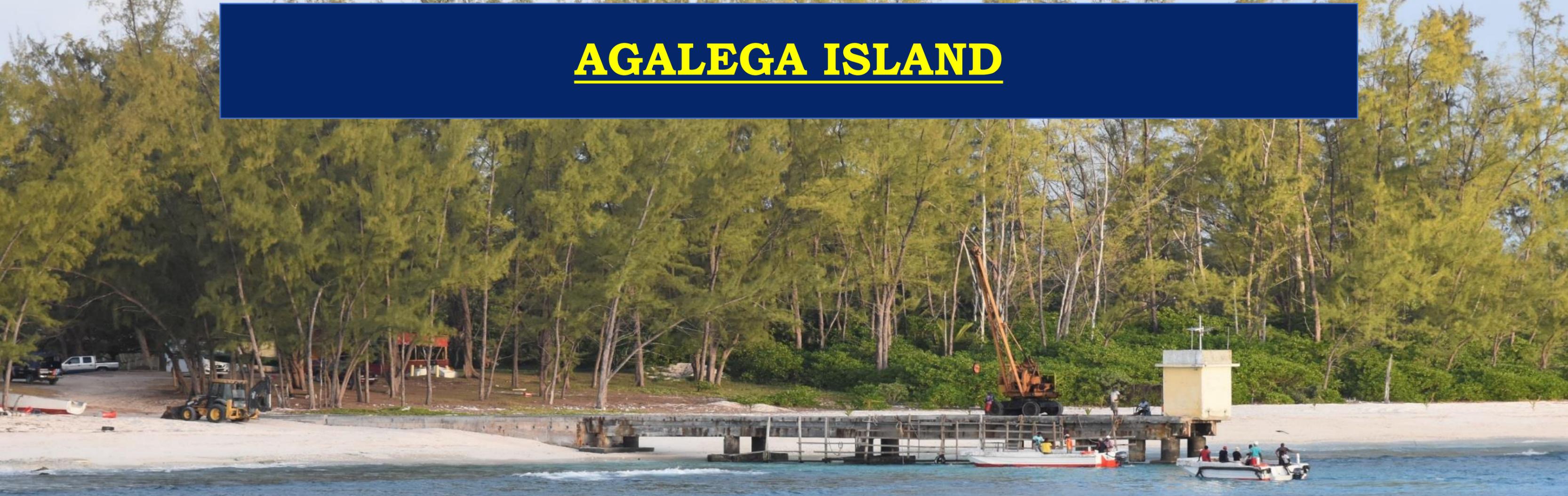


### **Aim:**

- Hydrographic Survey North West of Agalega Island was undertaken based on requirements projected by Outer Island Development Cooperation and National Coast Guard. The aim of the survey was to collect the bathymetry data all around the existing Jetty up to the 70 m depth towards the sea and to demarcate safe beaching site and for the project of extending the existing Jetty.

## **Survey at Agalega Island**

# AGALEGA ISLAND



# MARINE SAFETY INFORMATION



- Transmission of Navarea Warnings promulgated by Navarea VIII coordinator
- Flow of info to Navarea VIII Co-ordinator of changes affecting safe Navigation around Mauritius



	2021	2022	2023
<b>Navigational Warnings</b>	15	07	02
<b>Notice to Mariners</b>	04	02	02

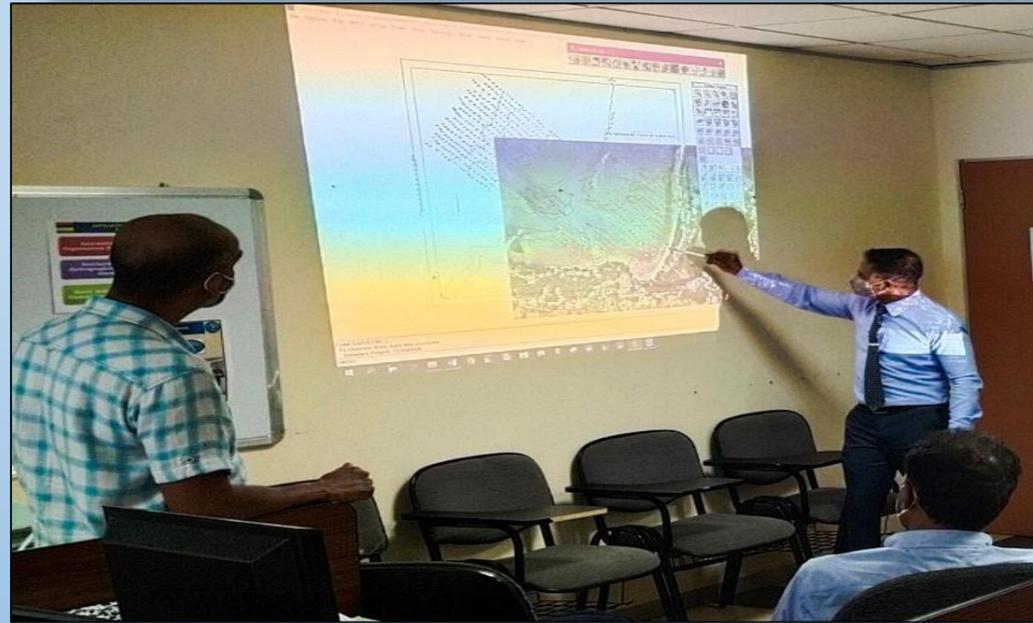
# IMSAS AUDIT -2020



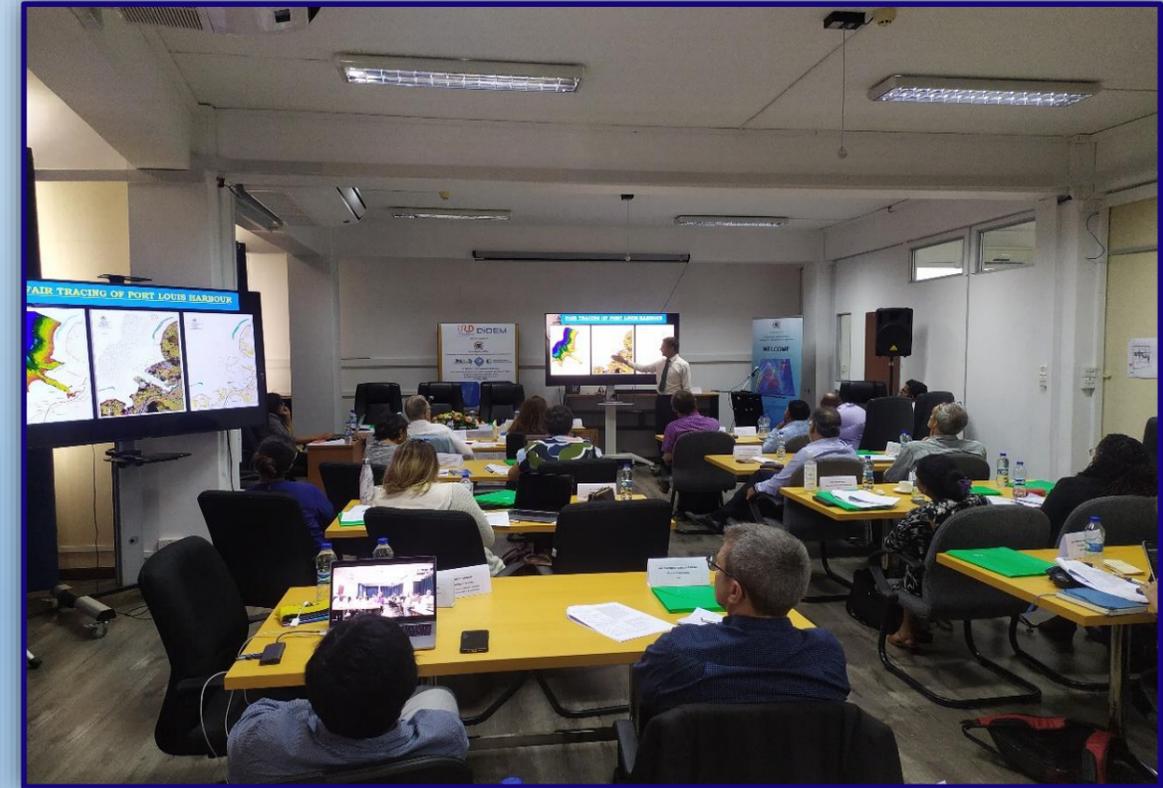
**Visit at the**  
**Mauritius**  
**Hydrographic Service**



# CAPACITY BUILDING AND TRAINING



# CAPACITY BUILDING AND TRAINING



## Mauritius Hydrographic Service Training Workshop - 2022 Single Beam Echosounder Training Program

**Day 1 : 25 April (1300 – 1600 Hrs) Venue : Ministry of Housing and Land Use Planning, MHS 5<sup>th</sup> Floor**

- General Theory on Hydrography
- Overview of Hydrographic Survey Planning
- Overview of Data Collection Software (HYPACK)
- Overview on Planning of Survey Lines
- Theory on Configuration of Echo Sounder, Motion Sensor and DGPS

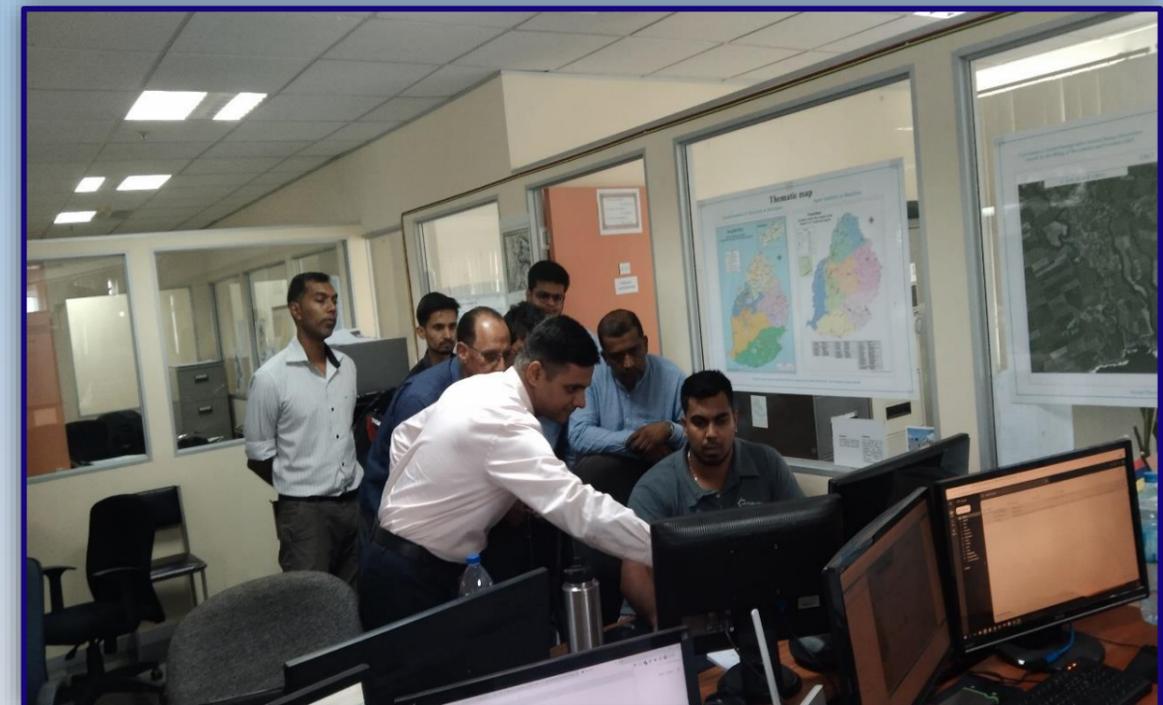
**Day 2 : 26 April (1000 – 1600 Hrs) Venue : Harbour Security Point, Port Louis**

- Practical - Field Data Collection on Inshore Survey Vessel 'PathFinder'
- Configure Atlas Deso 30 Single Beam Echo Sounder, Motion sensor, DGPS, HYPACK
- Hydrographic Data Collection, Tides, SVP

**Day 3 : 27 April (1300 – 1600 Hrs) Venue : Ministry of Housing and Land Use Planning, MHS 5<sup>th</sup> Floor**

- Processing of Hydrographic Bathymetry Data Collected on Day 2
- CARIS HIPS/ SIPS – Hydrographic Data Processing
- CARIS Paper Chart Composer – Production of Final Chart / Fair Sheet

Registration  
Before  
20 April 2022



# AWARENESS ABOUT HYDROGRAPHY



## INDIA - MAURITIUS STEM WEEK

31 May -04 June 2022

Jointly organised by  
**THE MINISTRY OF EDUCATION, TERTIARY EDUCATION, SCIENCE AND TECHNOLOGY**  
and the  
**HIGH COMMISSION OF INDIA**  
in collaboration with  
**RAJIV GANDHI SCIENCE CENTRE**



# AWARENESS ABOUT HYDROGRAPHY



Celebrating the 50<sup>th</sup> Independence Anniversary of Mauritius

# AWARDS AND RECOGNITION



National Productivity and Competitiveness Council



Mauritius Hydrographic Service,  
Ministry of Housing and Land Use Planning

CATEGORY  
GOVERNMENT DEPARTMENTS, PARASTATALS  
AND REGISTERED ASSOCIATIONS

**NPQC 20/21**

NATIONAL PRODUCTIVITY AND QUALITY CONVENTION

MAURITIUS

Pursuing Productivity and Quality amidst COVID-19

Ashit Gungah  
Executive Director

INTERNATIONAL HYDROGRAPHIC REVIEW

NOVEMBER 2018

Notes

## ESTABLISHING HYDROGRAPHIC SERVICES IN MAURITIUS

### 1. Need for Hydrographic Services in Mauritius

Mauritius is an Island nation of 2,040 Km<sup>2</sup> situated 20° South of the Equator and on longitude 57.5° East with a large Exclusive Economic Zone (EEZ) of around 2.3 million Km<sup>2</sup>. In addition, an area of 396,000 Km<sup>2</sup> of seabed in the Mascarene region is jointly managed by the Government of Mauritius and the Republic of Seychelles. This enormous EEZ provides the maritime state significant economic opportunities waiting to be embraced. Furthermore, sea borne trade is vital for our national and economic development.

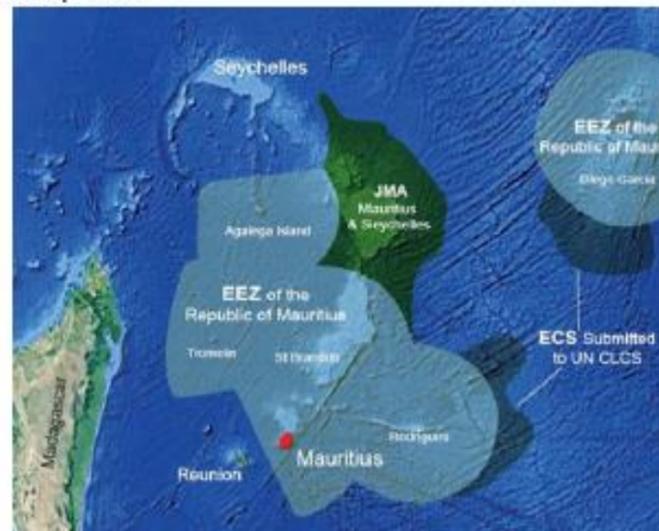


Figure 1. EEZ of the Republic of Mauritius

The fragile coastal area requires environmental protection and more scientific research for sustainable development. Maritime security, protection, ensuring safety of life at sea, marine scientific research and living and non-living resources in the vast EEZ hold the key to the future. The island nation is heavily dependent on sea borne trade for meeting its needs of energy and other essential commodities. Updated nautical products



Commonwealth Association of Public  
Administration and Management

## Certificate of Distinction

CAPAM takes great pleasure in recognizing

**Impact of Hydrographic Services**

submitted by

**Hydrographic Unit, Ministry of Housing and Lands, Mauritius**

as a finalist in the 2018 International Innovations Awards category of

**INNOVATION INCUBATION**



Gay Hamilton  
Executive Director & CEO

# ROADMAP FOR THE FUTURE



**Provision of Legal Framework for Mauritius Hydrographic Service**

**Develop Deep Sea Surveying Capability**

**Procurement of Advanced Hydrographic Equipment/Software Suites**

**Develop Marine Cartographic Capability**

Thank you

