



**INAHINA - INSTITUTO NACIONAL DE  
HIDROGRAFIA E NAVEGAÇÃO - MOZAMBIQUE**

**NATIONAL REPORT FROM MOZAMBIQUE  
TO THE**

**17<sup>th</sup> SOUTHERN AFRICA AND ISLANDS HYDROGRAPHIC  
COMMISSION MEETING**

**VIDEO CONFERENCE MEETING  
3<sup>rd</sup> – 4<sup>th</sup> FEBRUARY, 2021**

## **1. Introduction**

With this report it is intended to give a general summary of the main activities carried out by INAHINA – the Mozambican Hydrographic Office (MHO). The report cover all the activities carried out between the period from September 2019, to February, 2021.

## **2. The Hydrographic office**

The INAHINA – Instituto Nacional de Hidrografia e Navegação, is the Mozambican Hydrographic Office (MHO) under the Ministry of Transport and Communications, whose main function is to ensure safety of navigation along the Mozambican waters, through provision of the:

- Hydrographic surveys within the Mozambican Waters,
- Nautical Charts;
- Aids to Navigation, and
- Other nautical documents and information that include Tide Tables and Currents.

INAHINA activities are carried out at the:

- Three main ports, namely Maputo, Beira, and; Nacala;
- Eight secondary Ports, namely, Inhambane, Chinde, Macuse, Quelimane, Angoche, Pemba, Mocimboa da Praia, and Palma.
- And in some rivers and lakes such as Zambezi and Limpopo Rivers, Lake Niassa and Bilene Lagon.

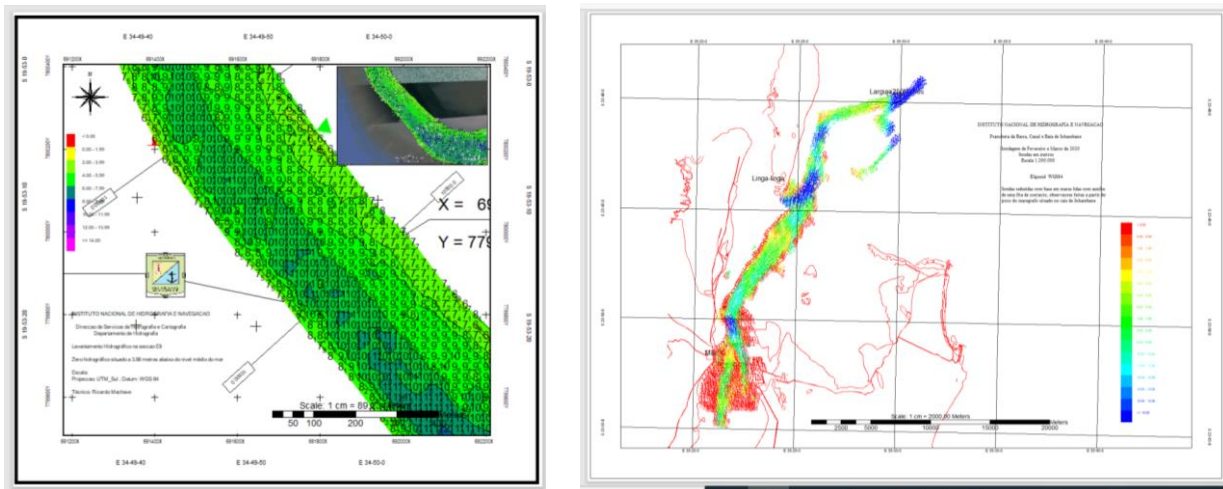
## **3. Surveys**

Hydrographic surveys are mainly conducted with the purpose of producing new charts, updating the existing charts, and ascertain the viability of navigating along the rivers, lakes and lagoons.

So far, INAHINA produces paper charts, based on bathymetric data collected with resort to both single and multibeam echo-sounder systems.

### 3.1. New surveys

INAHINA has carried out in the report period, field visits and hydrographic surveys aiming at updating the nautical charts or ascertaining the viability of navigation on Rivers. Figure 1, below illustrate the Bathymetric maps of two areas where the hydrographic surveys were conducted.



**Figure 1:** Bathymetric maps corresponding to one of the sections in Beira access channel (left side), and the Inhambane access channel (right side).

Following are listed the activities and the sites where Hydrographic surveys were carried out in the report period:

- 3.1.1 Hydrographic survey at the Port of Mocímboa da Praia
- 3.1.2 *Hydrographic survey at Beira Port and access channel to update the Bathymetry after the passage of Cyclone IDAI;*
- 3.1.3 Hydrographic survey at Maputo Bay – in the Macaneta area to update the Bathymetry
- 3.1.4 Field visit to prepare Hydrographic Survey at the crossing area of Mutarara-Sena in Zambezi River;
- 3.1.5 Field visit to prepare Hydrographic Survey along the Zambezi River in the section between Zumbo and Calote;
- 3.1.6 *Hydrographic Survey at the crossing area of Mutarara-Sena for updating bathymetry;*

### 3.1.7 Hydrographic Survey at Inhambane Bay for updating bathymetry.

### 3.2. Planned surveys

As the planned activities, INAHINA plans to carry out in 2021, hydrographic surveys in the following areas, and with the following purposes:

- 3.2.1 Quelimane access channel and Port, to assist in the delimitation of the navigation channel and updated the nautical chart.
- 3.2.2 Metangula and Cobue areas, in Lake Niassa, to assist the government on taking informed decision while designing multimodal transport system in Mozambique.
- 3.2.3 Hydrographic Survey along the Zambezi River, in the section between Zumbo and Caaliote, to assist the government on taking informed decision while designing multimodal transport system in Mozambique.

## 4. Cartography

INAHINA has consolidated the production of both, national and INT paper nautical charts. Currently, the production and updating of charts have been done with less constraints.

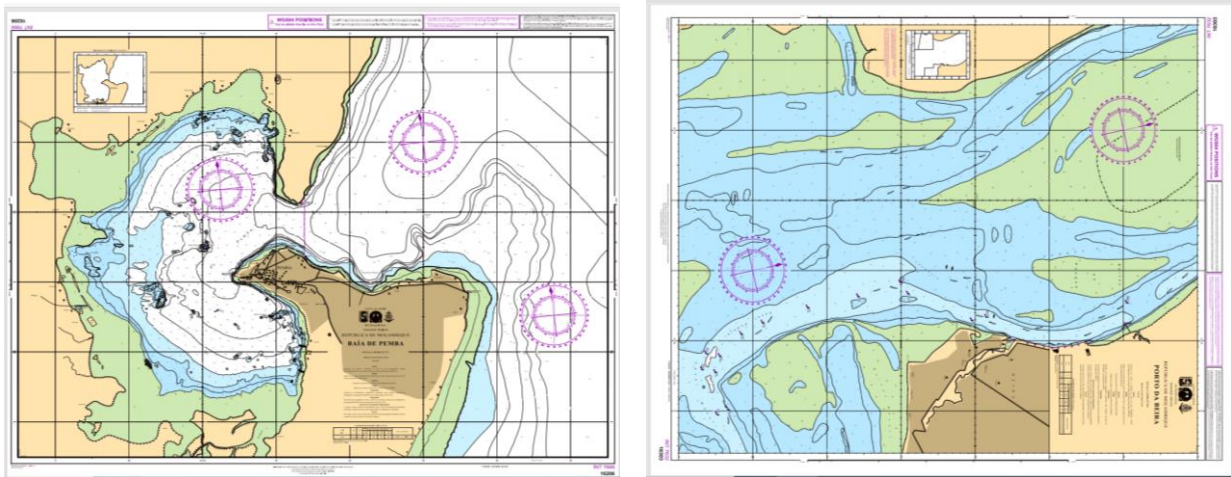
The Mozambican catalogue of nautical charts consist of coastal charts – in scale of 1:300.000; approximation charts in scale of 1:30.000 and port charts in scales varying from 1: 15.000 to 1:20.000.

### 4.1. National charts

With regard to the national paper charts, INAHINA has started with the production of the 16203MZ – Baía de Inhambane Chart. The compilation phase has started, and was interrupted as it was seen as imperative the inclusion on the chart the updated topographic information.

### 4.2. INT Charts

During the report period, INAHINA has concluded the updating of nautical charts of the Ports of Pemba and Beira. Figure 2 below, shows the updated charts. INAHINA has also started with the production and update of nautical charts in other Ports.



**Figure 2:** The updated INT7666 and INT7632 charts of Pemba Bay (left side), and Beira Port, respectively.

Following are listed the activities and the sites where those activities on INT paper charts are carried out:

- 4.2.1 Conclusion of the update of the INT7632 – Porto da Beira.
- 4.2.2 Conclusion of the update of the INT7666– Baía de Pemba.
- 4.2.3 Compilation phase of the updating of the INT7631 – Approach to Beira Port. It is in verification and correction phase
- 4.2.4 Compilation phase of the updating of the INT7620 – Cabo Sao Sebastião to Beira
- 4.2.5 Compilation phase of the production of the INT76382 – Approach to Maputo Port. Topographic information was updated. Waiting for the validated hydrographic information.
- 4.2.6 Compilation phase of the updating of the INT7641- Approach to Quelimane Port. Bathymetric information was updated. Waiting for the updated topographic information.

In the table below is summarised the status of INT charts production or updating in Mozambique, as well as the expected date for conclusion of the activities

Table 1. Summary of INT Charts being updated.

INT Chart Nr.	INT Chart Name	Status	Year	Expected Date for conclusion
16393/INTV7632	Beira Port	Updated	2020	
16206MZ/INT7666	Pemba Bay	Updated	2020	
16204MZ/INT 7631	Approach to the Beira Port	Update in progress		May 2021
13204MZ/INT7 620	Cabo São Sebastião to Beira	Update in progress		July 2021
16401MZ/INT7682	Approach to Maputo	Production in progress		September 2021
16402MZ/INT7641	Approach to the Quelimane Port	Production in progress		July 2021
16203MZ	Inhanbane Bay	production in progress		June 2021

#### 4.3. ENC's

INAHINA is still endeavoring to create the needed capacity to start with the production of ENCs. To this goal, INAHINA in collaboration with IHPT, have discussed the possibility of IHPT assist in training the INAHINA staff on the ENCs production. INAHINA also has advertised a bid to acquire licenses for ENCs production.

#### 4.4. Charts for pleasure Craft

The Uembje beach pleasure chart, in Bilene, Gaza, is the first and the only pleasure chart produced by INAHINA in 2018. And at this stage, there is nothing to report apart from what was reported in the previous reports.

#### 5. MSDI & GMDSS

Marine Spatial Data Infrastructure – MSDI and the Global Maritime Distress Safety Information – GMDSS remain as subjects under the mandate of INAMAR – The National Maritime Authority. Below is the personal information of the national coordinator at INAMAR:

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## **6. Capacity Building**

The INAHINA sees as a priority the enhancement/strengthen of capacity building actions in the Region as a whole. And has taken part at the IHO Capacity Building Sub-Committee meetings (CBSC).

In terms of needs in capacity building, the following has been identified as the INAHINA's short terms needs in capacity building:

- Hydrographic on job training in multi beam echo sounder system (one was held in Maputo later in 2018);
- Hydrographic on job training in side scan sonar system;
- ENC on job training course;
- Paper chart refreshment training;
- Hydrography Cat B and Cat A training courses;
- Cartography Cat B and Cat A Training course.

Mozambique thanks the kind offers received from its partners, namely: Portuguese Hydrographic Institute – (IHPT) and the Directorate of Hydrography and Navigation of Brazil – (DHN) to receive, accommodate and train Mozambican hydrographers and cartographers.

INAHINA has identified introducing ENC as one of the main targets in near future, but lack of technical capacity and training of personnel in this field are challenging the achievement of this goal.

## **7. Marine Aids to Navigation**

The INAHINA mandate, includes also partial provision and promulgation of the aids to navigation. Other component of aids to navigation are provided and promulgated by INAMAR – The Mozambican National Institute for Sea.

In general, the provision of aids to navigation under the responsibility of INAHINA, comprises the delimitation of access channels to the Ports, Construction and maintenance of lighthouses, and others structures to assist the mariners on getting into the Ports, and the promulgation of Notice to Marines/aids to navigation, through the sharing of relevant safety marine information with the NAVEAREA –VII coordinator.

Within the report period, Notice to Marines were shared with the NAVEAREA –VII coordinator in average three times a month, making up approximately 10% of the dedicated annual working of the national coordinator in the issue of promulgation of aids to navigation.

In the report period, INAHINA has also acquired 51 lighting Buoys, (see the illustrations of the buoys in figure 3), which were used to delimitate the access channels to Beira Inhambane and Pemba Ports.



**Figure 3:** Illustration of 7 lighting Buoys acquired by INAHINA, and used in the Beira, Inhambane and Pemba Ports to delimitate the access channels to the Ports, activities within the scope of provision of aids to navigation.



INAHINA has also rehabilitated the Barra Falsa Lighthouses, as can be seen in the figure 4. The optic system of the lighthouse, is expected to be installed in the first semester of 2021



Figure 4: The rehabilitated Bara Falsa Lighthouse

Regarding the planned activities, within the aids to navigation section, it is expected to conclude in 2021, the modernization of aids to navigation system in the Port of Quelimane, as well as the rehabilitation of Vilhena, Fernao Veloso, Nacala, Monte Belo and Ponta D'ouro lighthouses

## **8. Oceanographic Activities**

During the report period the prominent oceanographic activities can be summarized as the following:

- Assistance on Hydrographic Surveys
- Maintenance of Oceanographic Buoys
- Installation of Tide gauge
- Production of Tide Table for the all ports of Mozambique

INAHINA has installed a digital tide gauge in Nacala Port. The figure 5 illustrate the part of installed tide gauge.



**Figure 5:** Cabinet of digital tide gauge installed in Nacala Port

In the report period INAHINA has, maintained as well, the oceanographic Buoys (see figure 6), moored in Maputo Bay.



**Figure 6:** Oceanographic Buoy maintained in Maputo Bay

INAHINA has also produced the tide table for the following Mozambican Ports: Maputo, Inhambane, Beira, Chinde, Quelimane, Pebane, Angoche, Ilha de Mocambique, Nacala, Pemba, and Mocimboa da Praia

## **9. Equipment**

During the report period, activities at INAHINA related to equipment, consisted mainly on maintenance of equipment, some of them affected/damaged by the tropical cyclone IDAI

in 2019. In this period were also maintained The buoy tender vessel Bazaruto, two Hydrographic Boats, and a set of Buoys and Lighthouses.

### **9.1 New ships**

Nothing to report

### **10. Constraints**

Nothing to Report

### **11. Participation in international fora**

Representatives from INAHINA have participated in international fora through Video Tele Conference meetings. These include participation in the; CBSC meeting and in SAIHC - ICCWG meetings.

INAHINA has also participated at the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) held in Malaysia in 2020.

### **12. Bilateral partnerships**

The IHO Strategic Plan describes bilateral partnerships as one of IHO framework to meet the objective of ensuring global surveying coverage. In that line, INAHINA has signed two bilateral protocols with the Portuguese Hydrographic Institute (IHPT) and the United Kingdom Hydrographic Service (UKHO), both covering fields of hydrography, cartography and related areas.

In the report period, bilateral partnership was focused more in the implementation of these bilateral protocols, mainly on the updating and production of Nautical Charts.

### **13. Remarks**

INAHINA continues committed at improving hydrographic and cartographic services, as well as aids to navigation as part of its contribution to the safety of navigation worldwide.

Although the production of nautical charts of the ports and approximation channels remain the main focus, hydrographic surveys are gradually being extended to another areas of concern not surveyed before, those includes rivers and lakes.

This elucidate once more the need to attend the existing training opportunities to enable the qualification of hydrographers and cartographers to increment their daily achievement.