

## COMOROS

The Comoros are an archipelagic nation formed of a group of volcanic islands at the northern mouth of the Mozambique Channel, about two-thirds of the way between northern Madagascar and northern Mozambique. The archipelago includes in particular the islands of Grande Comore, Anjouan and Mohéli. It has 340 km of coastline, a total land area of 2,235 sq km and a population of 752,438<sup>1</sup>. This section provides a summary report of the assessment visit conducted by an IOC-IHO expert team from 29 May to 1 June 2010.

The team was welcomed by Mr. Abdillah Mouigni, Secretary General, Ministry of Transport, Tourism and Investments. It had the opportunity to meet and discuss with all institutions in Comoros likely to be concerned with this project<sup>2</sup>. The team also presented the Coast-Map-IO project to Mrs. Anliyat Mze Ahmed, programme specialist at the United Nations Development Programme (UNDP). The assessment results are summarized in Table 12.



<sup>1</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/cn.html>

<sup>2</sup> Mr. Sidi Ainouddine, Director of CNDRS (Centre National pour la Documentation et la Recherche Scientifique); Mr. Mohamoud Poundja, Director of Meteorology ; Col. Ismael Mogne Daho, Director of COSEP (Centre des Opérations de Secours et de la Protection Civile).



Welcome by the Secretary General, Ministry of Transport, Tourism and Investments



Visit to the UNDP Programme Specialist



Participants in Meeting at COSEP



Possible location for a tide gauge in the port of Moroni



Participants in Meeting at the Meteo Centre

**Table 12. Comoros National Assessment Summary, May 2010**

Status	Needs
<b>Mapping and research agencies: potential fields of competence<sup>3</sup></b>	
• Centre National de Documentation et de Recherche Scientifique (CNDRS):	
• Centre des Opérations de Secours et de la Protection Civile (COSEP) :	
• Météorologie Nationale (Meteo) :	
• Département SIG du Ministère de l'Environnement (SIG) :	
•	
<b>Summary of available products and data</b>	
• Bathymetry	
○ CNDRS: <i>none</i>	
○ COSEP: <i>none</i>	
○ Meteo: <i>none</i>	
○ SIG: <i>none</i>	
○ Future National Hydrographic Service	Coastal hydrographic surveys
• Topography	
○ CNDRS: <i>none</i>	
○ COSEP: complete series of 1: 50,000 topographic maps, partially available in digital raster form.	Digitizing tools
○ Meteo: <i>none</i>	
○ SIG: availability of some digital topographic data.	
<b>Summary of resources available</b>	
• Human	
○ CNDRS: 1 MS oceanographer, trained on COMMIT tsunami modelling software; several MS geologists.	Training in tsunami modelling for 2 officers.
○ COSEP: 1 GIS specialist	Training in data processing and management for 2 officers.
○ Meteo: several meteo and hydro-geologist specialists	

<sup>3</sup> See addresses and focal points at Annex 12A

Status	Needs
<ul style="list-style-type: none"> <li>○ SIG: 1 GIS specialist</li> </ul>	
<ul style="list-style-type: none"> <li>○ Future National Hydrographic Service</li> </ul>	Training in basic hydrography for 4 officers; training for 1 Cat A Hydrographer and 4 Cat B hydrographers.
<p>Note: 1 specialist in data acquisition, processing and management, trained within Coast-Map-IO and currently unemployed.</p>	
<ul style="list-style-type: none"> <li>● Platforms</li> </ul>	
<ul style="list-style-type: none"> <li>○ CNDRS: <i>none</i></li> </ul>	
<ul style="list-style-type: none"> <li>○ COSEP: <i>none</i></li> </ul>	
<ul style="list-style-type: none"> <li>○ Meteo: <i>none</i></li> </ul>	
<ul style="list-style-type: none"> <li>○ SIG: <i>none</i></li> </ul>	
<ul style="list-style-type: none"> <li>○ Future National Hydrographic Service</li> </ul>	1 launch; 2 zodiacs
<ul style="list-style-type: none"> <li>● Equipment/Software</li> </ul>	
<ul style="list-style-type: none"> <li>○ CNDRS: ArcGIS 9; 1 computer; COMMIT (tsunami modelling)</li> </ul>	1 additional computer for tsunami modelling
<ul style="list-style-type: none"> <li>○ COSEP: 2 computers, 1 A0 plotter</li> </ul>	2 computers for database management; ArcGIS software
<ul style="list-style-type: none"> <li>○ Meteo:</li> </ul>	
<ul style="list-style-type: none"> <li>○ SIG: about 10 computers; 1 A0 plotter; GIS tools</li> </ul>	
<ul style="list-style-type: none"> <li>○ Future National Hydrographic Service</li> </ul>	Caris GIS, Hypack & Caris Hips; GIS Workstations to maintain Hydrographic Database; Survey Equipment e.g. 2 portable Single-Beam Echo-sounders (SBE), 1 portable Multi-Beam Echo-sounder (MBE), 2 DGPS receivers, 1 velocity profiler; 1 Side Scan Sonar (SSS); 1 current meter; 1 sub bottom profiler.

## CONCLUSIONS

1. There is no institution responsible for hydrography in Comoros. There is very limited in-country capability to acquire, process and manage geospatial data, as well as for tsunami modelling, although the Government of Comoros has passed a decree in 2009 to create a National Hydrographic Service (not yet set up as of May 2010).
2. Some capacity exists at the national centre for documentation and scientific research (CNDRS) to deal with oceanographic data within IOC-IODE programme. More potential is available at the centre for rescue operations and civilian protection (COSEP) to manage geospatial data.
3. Consequently, it would seem logical to establish the future Coast-Map-IO database at COSEP, in cooperation with CNDRS.
4. From the information available, it seems that very little bathymetric data can be obtained in the Comoros area from the known sources, e.g. nautical charts. Therefore, the only option to populate the bathymetric database will be to undertake new bathymetric surveys for the area of interest to Coast-Map-IO, i.e. down to 200 m depth.
5. There exists a complete coverage of Comoros with topographic maps at scale 1:50,000, although they are fairly old and not updated. The availability in digital gridded form of those maps bordering the coast, up to 50 m height, would likely be suitable to populate the topographic database.
6. The Comoros “Gendarmerie Maritime” (Coast Guards) holds several launches which hopefully can be made available to conduct hydrographic surveys, in cooperation with the future National Hydrographic Service.
7. The GIS Department under the Ministry of Environment holds several computers and geospatial databases which could possibly be useful to the project.
8. The lack of a National Hydrographic and Oceanographic Committee, where all relevant institutions would be represented, is a serious handicap for coordinating their activities in order to progress hydro-oceanographic matters.
9. As a potential beneficiary of Coast-Map-IO, COSEP acting as national disaster management centre, would be expected to actively support the project.
10. There exists no fundamental bench mark in Comoros.

## RECOMMENDATIONS

1. Necessary measures should be taken to establish a National Hydrographic Service, in accordance with the 2009 Government decree, and make it operational.
2. A National Hydrographic and Oceanographic Committee should be created to coordinate the activities of all relevant institutions, in view of improving their overall efficiency. This committee should receive appropriate support at Government level.
3. Due to its potential, the centre for rescue operations and civilian protection (COSEP) should be responsible for the establishment and management of the seamless Coast-Map-IO gridded bathymetric and topographic database, in cooperation with the national centre for documentation and scientific research (CNDRS). This responsibility could subsequently be transferred to the National Hydrographic Service when it is operational.
4. Appropriate equipment/software and training should be provided to COSEP to manage the bathymetric and topographic database.
5. The rare bathymetric data which could be derived from the known sources, e.g. nautical charts, ASCLME project, survey of the Yemenia plane crash area, should form the basis of the Coast-Map-IO bathymetric database. Additional bathymetric surveys should be planned and conducted in identified vulnerable coastal areas. Pending the setting up of a fully operational National Hydrographic Service, these surveys can only be envisaged through external partnership/sponsorship.
6. Appropriate digitizing tools, and associated training, should be provided to COSEP in view of creating the gridded topographic database from digitizing the existing coastal topographic maps at 1:50,000.
7. Bathymetric and topographic data should be encoded according to international standards.
8. CNDRS should be responsible for tsunami modelling and inundation map construction.
9. Appropriate equipment/software and training should be provided to CNDRS in support of tsunami modelling and inundation map construction.
10. COSEP should be the focal point for Coast-Map-IO, and ensure and strengthen the necessary cooperation between the institutions involved in the project.
11. A fundamental bench mark for Comoros should be determined in cooperation with IOC.
12. Consideration should be given to taking advantage of the newly established School of Hydrography in Majunga, Madagascar, to train Comorian hydrographers in French language.
13. Government of Comoros is invited to be represented at the meetings of the Southern Africa and Island States Hydrographic Commission (SAIHC), to benefit from the IHO Capacity Building Programme.
14. Government of Comoros is invited to consider joining the International Hydrographic Organization.

**MAPPING AND RESEARCH AGENCIES IN UNION OF COMOROS**  
**Addresses and Focal Points**

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### STATUS OF BATHYMETRIC DATA IN COMOROS

