

**NATIONAL REPORT
ON THE SITUATION OF HYDROGRAPHY IN MADAGASCAR**

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This report gives an outline of the situation concerning the hydrography in Madagascar and a presentation of request for cooperation.

1 OUTLINE OF THE SITUATION

1.1 National Hydrographic Committee

Following the recommendations issued from the joint visit of the OHI/CBC and SHOM, 2006-2007 in Madagascar, a technical team for hydrography (TTH) constituted by the National Hydrographic Institute (FTM), the Malagasy Navy (COFONA) and the Port, Marine and Fluvial Agency (APMF), worked on the creation of the National Hydrographic Committee (NHC). It was finally concluded by decree n°2011-120, Mars 2011.

1.2 NHC first meeting

Then, the TTH had preparatory meetings, discussing on the basis of the document *Prioritised National Survey Plan* prepared by SHOM. The participants were particularly convinced about the stipulation that it will take 55 to 75 years to have complete chart coverage of the Malagasy coast with adequate equipment as a condition. Prioritization is therefore unavoidable and the use of spatiocartes when necessary seems practical.

Thus, the NHC’s first meeting was held in December 2011 with the objective of exposing to its members that given the importance of work and the lack of proper equipment, it is rational for a first step to think about spatiocartes as an alternative solution, awaiting hydrographic survey.

	<p>MADAGASCAR <i>needs for covering the 5603km of coast</i></p>		
	<p><u>at scale:</u></p> <p>≈1/150 000</p> <p>≈1 : 50 000</p>	<p><u>to update:</u></p> <p>19 existing charts</p> <p>23 existing charts</p>	<p><u>to create:</u></p> <p>15 spatiocartes</p> <p>80 spatiocartes</p>
<p><i>from “Prioritized National Survey Plan” - SHOM</i></p>			

The General Secretary of the Ministry seized the opportunity to emphasize the multiple stakes of hydrography for a large island as Madagascar, particularly for control ship-based pollution, risks and disasters management, and SOLAS Convention ratified by Madagascar in 1976.

The Regional Director of IGN France International was specially invited to give explanation about spatiocartes and to present the interest of its use in charting.

It was proposed to conduct a feasibility study of a spatiocarte's project in the pilot area of Nosy Be.

1.3 TTH Cooperation

- The proposed project constitutes already an opportunity to consolidate the collaboration among the members of TTH:
 - o The COFONA offered to provide the necessary launch
 - o The FTM proposed to include the use of the single beam echosounder and GPS receiver acquired in 2011 from CoastMap-IO. It will be an inauguration that provides control profiles.
- The TTH sent by turn representatives during SHOM surveys on board Beautemps-Beaupré in Toamasina and Mahajanga (2008), for the marine highway in Mozambique channel (2010) and the latest in the north part of Madagascar (August-July 2014).



- FTM and APMF completed together a bathymetric survey in 2012 to test the echosounder and to provide more data for help decision. As conclusion, an on-the-job training on the use of equipments is required. We note that radio receiver is missing in the equipment pack.


1.4 Madagascar/France/Norway Tripartite Cooperation Project (2009)

- France has formally expressed its decision to cooperate with Madagascar in hydrographical domain and some achievements occurred particularly in training and in charting.
- Norway's pronouncement is still pending because of unclear role of the FTM at that time, added by political instability in Madagascar; both cases could endanger seriously the viability of the project.
- At the present, the FTM is definitely maintained as National Institute for Hydrography and the political situation is in a good way so, we certainly appreciate very much that Norway would reconsider its decision.

2 REQUEST FOR COOPERATION

- To this end, we would like to draw your attention to the experience of our host country: as it is reported in the poster N°8 exhibited during the World Hydrographic Day in 2008, Mozambique got important assistance from Scandinavian countries, especially Norway, that resulted to the

creation of INAHINA with surveying capacity of on-the-job trained personnel and six equipped survey launches.




POSTER 8

CAPACITY BUILDING IN MOZAMBIQUE – THE NORWEGIAN INVOLVEMENT

Scope of the project:
Scandinavian support to the Mozambican authority for hydrography and seamarking, today called INAHINA, took place continuously from 1986 till the end of 1998. Some low effort activity continued after formal project termination. The project was funded by the Danish, Norwegian and Swedish governmental help organizations as follows:

DANIDA (Denmark): support of seamarking (BTV "Bazaruto") 1990-1995
 NORAD (Norway): support of hydrography/institution building 1986-1998
 SIDA (Sweden): Rehabilitation of buoys/lighthouses + Light Dues system 1986-1993

Figures for project budgets/investments are a bit uncertain but above € 30 million.



The Norwegian Hydrographic Service (NHS) was linked to the project for the whole period, while Sweden and Denmark mainly used private consultant companies.

Number of specialists involved from Norway:
 The project leaders were for the whole project period settled in Mozambique. Except for a 2-3 years period the leaders were recruited from the NHS staff. In addition several specialists stayed for periods of some weeks and up to three years. In the peak period of the project approximately 5 man-years were spent annually. More than 25 different specialists were involved during the project period. Support was given in several disciplines like: management, surveying, oceanography, cartography, reproduction, administration/accounting and aids to navigation. For a couple of years a private company assisted with the Master and the Chief engineer for "Bazaruto"

Main achievements:

- Establishment of the Instituto Nacional de Hidrografia e Navegação (INAHINA) in 1989.
- On-the-job training of personnel both locally and in Norway was an extensive part of the project. Some formal education within took place in Portugal and UK.
- During the project Inahina became self-reliant with respect to chart editing and production
- The surveying capacity was increased highly as 6 survey launches with equipment was delivered



- The transfer of the buoy tender vessel (from Denmark) created a new era for Inahina. In addition to buoy handling the vessel introduced mobility for the survey brigades (transport of launches etc). In 1998 the first Mozambican was certified as Master of "Bazaruto"
- Rehabilitation and maintenance of aids to navigation, included several lighthouse and lights
- Improved management and organizational structure.
- Establishment of department for maintenance of equipment

- We are very grateful for all the training courses offered to our technicians since 2008. Unfortunately, they didn't have any opportunity to implement their knowledge and it is rather frustrating.
- In our previous reports, we reiterated that the best strategy for effectiveness of the hydrographic capacity development if we want to not stay as "observers" but to act and to survey our 5603km of coast is an on-the-job training/ in an in-situ pilot zone /with adequate equipment, including survey launches.
- As it was noted by our colleagues from Mozambique, such strategy presents important benefits
 - Costless and time-saving
 - Self productivity of the National Hydrographic Institute in regard to the National prioritized Survey Plan
 - Implementation of all the acquired trainings
 - SOLAS, Improvement of Emergency Response to Ocean-based Extreme Events, ...
- In the same way as Mozambique, a "multi-partenariat" would be ideal for the implementation and any proposition will be welcome.
- The fact that the Norway has offered us the opportunity to attend this conference is already a positive thing, we are very grateful for that and we hope that it will continue with the restart of the cooperation project.