Note

# RENAISSANCE OF CARTOGRAPHY IN EQUATORIAL GUINEA.

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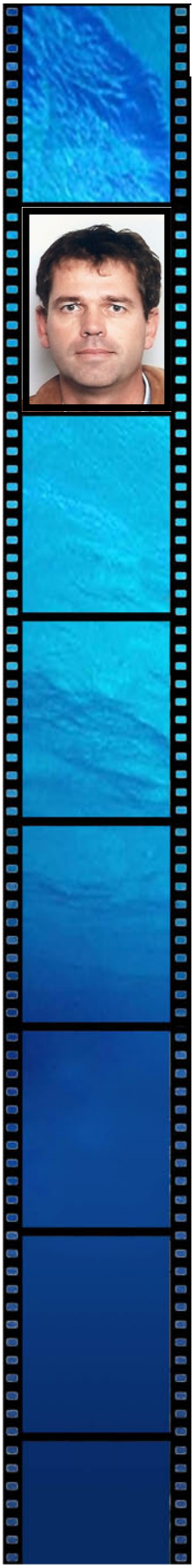

## Abstract

This Note refers to the different steps followed to build hydrographic capability in Equatorial Guinea. Acknowledging the intense maritime traffic in the area, the modernization of the precarious cartographic situation was a must and it was transformed in an Equatorial Guinea government challenge and ambition. France, an International Hydrographic Organization Member State, conducted hydrographic surveys and other operations with its Naval Hydrographic and Oceanographic Service (SHOM) and resurrected the cartographic activities opening an opportunity for a national sustainable hydrographic development to allow Equatorial Guinea to comply with international regulations aimed at providing information, products and services to ensure safety to navigation. It is just the start and some initiatives are still to progress.

## Résumé

Cette note se réfère aux différentes étapes suivies pour la création de capacités hydrographiques en Guinée équatoriale. Compte tenu de l'intense trafic maritime de la zone, la modernisation de la situation cartographique précaire qui était indispensable est aujourd'hui devenue un défi et une ambition du gouvernement de Guinée équatoriale. La France, Etat membre de l'Organisation hydrographique internationale, a exécuté des levés hydrographiques et d'autres opérations dans le cadre de son Service hydrographique et océanographique de la Marine (SHOM) et a ressuscité les activités hydrographiques, ouvrant ainsi la voie à la possibilité d'un développement hydrographique national durable pour que la Guinée équatoriale puisse se conformer aux règles internationales visant à fournir des informations, des produits et des services en vue d'assurer la sécurité de la navigation. Ce n'est là qu'un début et d'autres initiatives doivent encore être prises.

## Resumen

Esta Nota se refiere a las diferentes etapas seguidas para crear capacidad hidrografica en Guinea Ecuatorial. Siendo consciente del intenso trafico maritime en el area, la modernizacion de la precaria situacion cartografica constituyo un hecho y se transformo en un desafio y ambision del gobierno de Guinea Ecuatorial. Francia, un Estado Miembro de la Organizacion Hidrografica Internacional, llevo a cabo levantamientos hidrograficos y otras operaciones con su Servicio hidrografico y Oceanografico de la Marina (SHOM) y resucito las actividades cartograficas, abriendo una oportunidad para un desarrollo sustentable de la hidrografia en Guinea Ecuatorial a fin de cumplir con las normas internacionales tendientes a proporcionar informacion, productos y servicios que procuren seguridad de la navegacion. Es solo el comienzo y aun se debe progresar otras inicitivas.

## Increasing requirements

In the maritime field, Equatorial Guinea is poised to become one of the major crossing points in Central Africa for the circulation of manufactured goods and for support for the oil industry.

At the present time traffic is estimated to be in the region of 300 000 tonnes of merchandise per year. The existing ports are close to saturation. Among the many projects under way in Equatorial Guinea, transport is currently the subject of extensive plans for modernisation. Engineering companies and equipment manufacturers are gradually replacing the insufficient, unsuitable or dilapidated constructions with new, more modern infrastructures. In this way the government is realising its maritime ambitions.

## Natural assets

The volcanic landscape of the isle of Bioko and the sheer seabed naturally endow Malabo and Luba with deepwater ports, capable of accepting ships with deep draught (16 metres). Extension of the current wharves and the creation of new ones gained from the sea will enable the acceleration in goods traffic to be matched and will anticipate the imminent arrival of 3rd generation container ships with a capacity of 11000 TEU.

***Fig. 1** – Extension of the port of Malabo*

## Compliance with international obligations

Alerted by the International Hydrographic Organisation (IHO) to the dilapidated nature of its charts, Equatorial Guinea has gradually become aware of the need to synchronise its cartography with its coastal developments. Especially since the stakes are high and of a diverse nature: safety of navigation, development of the coastal belt, national sovereignty, actions of the state at sea….

***Fig. 2** – In addition to endangering human life, the perils of the sea*

Although it has not yet signed up to the International Hydrographic Organisation, Equatorial Guinea has, however, signed the SOLAS (Safety Of Life At Sea) and Law of the Sea (Montego Bay) conventions. It is also a member of the International Maritime Organisation (IMO). Consequently it has an obligation to provide all of the nautical information that is essential for operating at sea in complete safety and to communicate this information to the regional maritime community.

## Enlightened decisions

Development in a country like Equatorial Guinea means having up-to-date information in order to be able, in the main, to judge the relevance and cost of the work envisaged. Some shore zones would be able to accept deep-draught ships but would, for example, be too enclosed to accommodate a container port or a road network up the hills. Other regions would have sufficient space to create an airport hub, but would be disadvantaged by the regular and inexorable enlargement of the rivers that provide access to it.

The coastal strip is also the site for numerous human activities, often mutually exclusive but sometimes complementary. Only well-thought-out management of the space, and good coordination of the various parties involved, will enable collateral damage to be minimised and the necessary consensus to be achieved. A part of the enormous tourist potential of Equatorial Guinea might thus be exploited without waiting for the post-oil period.

In order to do this, there needs to be a national master scheme established long before the final decisions have to be taken, that would take account of these constraints associated with the environment. It is essential that such planning should be based on recent, accurate and detailed cartography, relying on modern technologies (space imagery, GPS positioning, multibeam echo sounders …).

## Act of empowerment

Detailed knowledge of one's territory is also an act of empowerment for which the chart constitutes an indispensable tool in the practice and maintenance of sovereignty. The international maritime boundaries shown on marine charts are a physical reflection of the political, military and economic legitimacy of the actions of Equatorial Guinea at sea. The naval forces responsible for assistance at sea, protection of oil platforms, and policing fishing and the fight against illegal immigration are among the first navigators to be served.

## Taking stock

The latest systematic hydrographic surveys of Equatorial Guinea date from the middle of the 1960s, before independence. A task historically undertaken by Spain, marine cartography of the waters and coast has long been abandoned in favour of activities deemed more essential for the development of the country.

Practically no hydrographic data from equipment manufacturers or oil companies have reached the Equatorial Guinea authorities. And yet information relating to ports, and the positions and movements of platforms, are essential items for the safety of navigation. No up-to-date chart of the area has been produced since the middle of the 1980s. After numerous alternations between discovery and neglect, it is now time to renovate this essential tool for the development of the country.

In 2003, a number of French experts were authorised by the IHO to help Equatorial Guinea in taking stock of these matters. Many proposals were then made to progressively update the charts. Successive deployments of French navy specialist ships chartered by SHOM (the French navy's Hydrographic and Oceanographic service) in Equatorial Guinea in 2009 and 2010 are now the most visible reflection of this.

## From Land…..

The visit by the French hydrographic ship *La Pérouse* in 2009 therefore initiated a long series of work. Aerial photographs taken over the principal ports of Equatorial Guinea: Malabo, Luba and Bata, have revealed notable differences from the old maps and have enabled the land parts of the navy chart to be updated.

***Fig. 3** – Aerial photographs of Malabo*

## ... to offshore

The *Laplace* took up the baton this year by conducting measurements of the seabed at those areas which are most necessary and critical for navigation. The descriptions of the buoys, lights and, more generally, all aids to maritime navigation have been checked, augmented and updated. The wharves and access channels taken by ships have been minutely explored in order to check that they are free from dangers or obstacles to navigation. All of the data acquired in this way will form the geographic reference baseline for creating future marine charts, and also for all Equatorial Guinea projects.


***Fig. 4** – The hydrographic ship Laplace at anchor at Corisco*

## Towards hydrographic autonomy

Through this work, SHOM is laying the foundation of a fruitful collaboration between France and Equatorial Guinea and resurrecting cartography activities in this region. This confirms the maritime vocation of the region that has ten times more sea area than land, and where 75% of imports and exports are made by shipping. Because of the intensification of maritime traffic and the development of new ports, the creation and development of hydrographic capabilities reporting to the port authorities is of prime importance

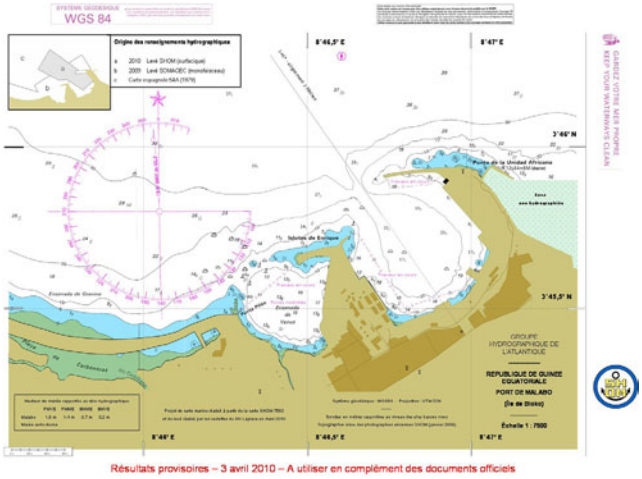


Fig. 5 – *Project for the future chart of Malabo*

In parallel with the work performed by SHOM, Equatorial Guinea might consider the creation of a national hydrographic committee, uniting the representatives of the various ministries concerned with maritime matters.

Such a committee could gather together the port authorities and the ministries for defence, the environment, fishing, transport, the merchant navy and all other organisations involved. The committee could be the focal point for centralisation and distribution of data for the maritime safety agency (RSM) and for initiating activities concerned with safety at sea. For SHOM and the IHO, the committee would provide a permanent preferred point of contact for these matters.

At the present time there is no organisation for RSM (Maritime Safety Agency) and GMSDS (Global Maritime Safety and Distress System). The current method imposes on ship captains the need to keep up-to-date personal logbooks each time that they enter territorial waters and ports, and then to pass such data among all ships. Maritime navigation is therefore based on rather unreliable methods of distributing nautical information. Equatorial Guinea must try to centralise the data and retransmit them to SHOM at Brest, coordinator for the NAVAREA II zone, extending over the eastern Atlantic (fig. 7). In turn, SHOM would redistribute the data via the INMARSAT satellites to ships passing through the zone. With regard to the distribution of coastal recommendations, a VHF radio network must be set up soon in Nigeria, and this will augment this essential facility for navigational safety.

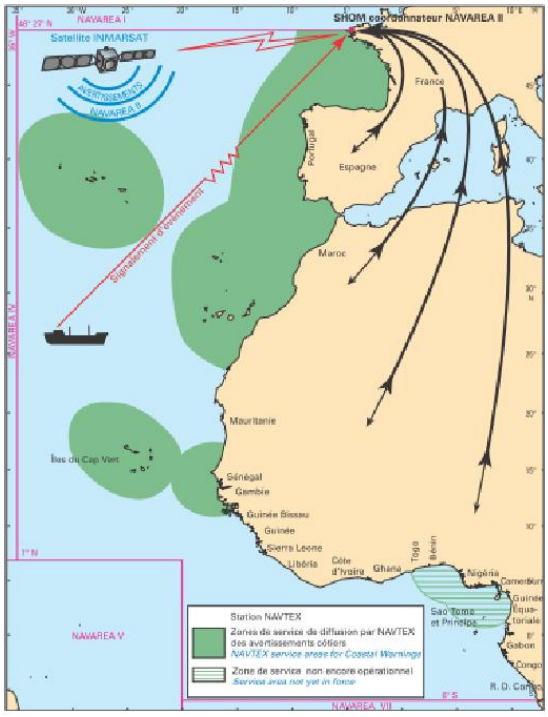


***Fig. 6*** –NAVAREA zone coordinated by France

France strongly encourages Equatorial Guinea to equip itself with its own hydrographic capabilities. In addition to regional collaboration with Nigeria, Cameroon and Gabon, Equatorial Guinea should proceed autonomously to collect nautical data and to group the material at a focal point charged with distributing urgent information to navigators; to generate its own marine charts and to keep them up-to-date. With the facilities at Equatorial Guinea's disposal and the willingness to do it, this objective could be achieved within a few years.