



IHO Capacity Building Programme

TECHNICAL VISIT REPORT

The State of Hydrography and Nautical Charting in Gambia (Republic of The)



Ministry of Transport, Works & Infrastructure
The Gambia Maritime Administration
The Gambia Port Authority
The Gambia Navy
National Environment Agency
Department of Lands & Survey
Department of Water Resources
National Disaster Management Agency
Geological Department
National Road Authority



22-26 July 2019

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ABBREVIATIONS

AtoN	Aids to Navigation
CBSC	IHO Capacity Building Sub-Committee
DGPS	Differential Global Positioning System
ECDIS	Electronic Chart Display and Information System
EEZ	Exclusive Economic Zone
ENC	Electronic Navigational Chart
FIG	Fédération Internationale des Géomètres (International Federation of Surveyors)
GIS	Geographic Information System
GMDSS	Global Maritime Distress and Safety System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HSSC	IHO Hydrographic Services and Standards Committee
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IBSC	International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers
ICA	International Cartographic Association
IHO	International Hydrographic Organization
IOC	Intergovernmental Oceanographic Commission
IMO	International Maritime Organization
IMSAS	IMO Member State Audit Scheme
INT	International
IRRC	IHO Inter-Regional Coordination Committee
LORAN	Long Range Navigation System
MS	Member State
MSDI	Maritime Spatial Data Infrastructure
MSI	Maritime Safety Information
NC	Nautical Charts
NHS	National Hydrographic Service
NHC	National Hydrographic Committee
NHCC	National Hydrographic Coordination Committee
NtMs	Notice to Mariners
PCA	Primary Charting Authority
RENC	Regional ENC Coordinating Centre
RHC	Regional Hydrographic Commission
RNC	Raster Navigational Chart
SOLAS	[United Nations] Convention for the Safety of Life at Sea
TTW	Territorial Waters
UN	United Nations
UNCLOS	United Nations Convention on Law of the Sea
WMO	World Meteorological Organization
UNGGIM	United Nations Global Geospatial Information Management
WWNWS	World Wide Navigation Warning Service

EXECUTIVE SUMMARY

A Technical Visit (TV) to The Gambia was conducted on behalf of the IHO by Mr Chris Thorne and Ms Lucy Fieldhouse, both from the UK Hydrographic Office. The visit focused on the recommendations raised from a previous IHO technical visit conducted in 2017 with an emphasis on The Gambia's MSI capability.

The team were able to meet with the stakeholders identified from the previous visit and other governmental agencies that also have input in the Gambian maritime and riverine environment. Meeting the Directors of these agencies allowed the technical team to outline the importance of implementing a National Hydrographic Committee (NHC) and the benefits of IHO membership. The importance of training and hydrographic education was emphasized to enable the development of The Gambia's capabilities and the opportunities this will provide to strengthen The Gambia's economy.

It was clear that there was an immediate need to improve communications between the stakeholders by establishing an NHC at the earliest opportunity. The GPA undertook to set up the initial meeting.

It was also clear that the MSI capability was far from ideal. This was largely due to the lack of funding to replace broken equipment and less than adequate communication between relevant stakeholders.

Several recommendations were made during the visit and are provided in this report

TECHNICAL VISITS

December 2015	First contact between M Dominic Correa (GPA), a recent graduate (Cat 'A') of MSc Hydrographic Science Program (USM) and M Alberto Costa Neves (IHO: Assistant Director in charge of Capacity Building).
January 2016	M Dominic Correa is put in contact with M Eric Langlois (SHOM) who is the Capacity Building Coordinator for the EAtHC.
March 2016	Captain Kuley Manneh (GPA) send a submission of a proposal to IHO Capacity Building Sub-committee for a Technical working Visit to the Gambia.
July 2017	Technical Visit to The Gambia is included by CBSC in the CBWP for 2017 (N° A-01) under the responsibility of EAtHC (TV led by SHOM, resources from IHO).
April 2018	Follow up Technical Visit to the Gambia is included by CBSC in CBSWP for 2019 under the responsibility of EAtHC (TV led by the UK Hydrographic Office (UKHO), resources from IHO).

Terms of Reference for this Technical Visit can be seen at Annex A.

The Gambia has been audited by both the IMO and IALA since the previous IHO funded TV conducted in 2017.

- IMSAS (IMO Member State Audit Scheme) was conducted in September 2018.
- IALA Technical Audit conducted in February 2019.

The Recommendations and Outcomes of both audits were provided to the IHO TV team by the Gambia Maritime Administration (GMA) and were considered during the visit.

GENERAL AWARENESS IN THE COASTAL STATE

The Gambia are a member of the IMO.

The Gambia are not a member of IALA.

The Gambia are not a member of the IHO but membership is being considered with a cabinet paper in preparation by the GMA. The process for proceeding with membership is understood.

There is a good understanding of SOLAS obligations and the importance of hydrography within the Gambia Port Authority (GPA), GMA and The Gambian Navy. There are efforts underway to develop an NHC, as recommended by the TV conducted in 2017 and all the stakeholders are determined to drive this forward. Prior to this TV there has been a reluctance to begin the establishment of an NHC until relevant hydrographic equipment has been purchased. This TV has highlighted the importance to all stakeholders that the commencement of the NHC should not be further delayed.

Whilst there is an awareness of The Gambia's SOLAS obligations, resources to fulfil these are limited and support is required. This is evidenced through the deterioration of their MSI capability and their inability to replace broken equipment.

The stakeholders are aware that the UK Hydrographic Office (UKHO) act as the Primary Charting Authority on behalf of The Gambia. At present there is no formal agreement in place for this undertaking. It is vital that Coastal States ensure that their PCA is kept informed of any information relating to SOLAS and as such, this issue was also addressed during the TV.

IHO/RHC MEMBERSHIP OF THE GAMBIA

The Gambia are not a member of the IHO. A recommendation from the IHO TV conducted in 2017 was for The Gambia to become an Associate Member of the EAthC at the 2018 meeting held in Lagos, Nigeria and the EAthC Chair have subsequently written to the GPA encouraging their membership. Following a discussion between GMA staff and IHO Secretary General, Jonas Matthias, GMA now believe that full membership of the IHO should be considered.

The GMA asked the IHO TV delegation for clarification on the contributions that would be required for Membership and the protocols regarding the signing of the International Hydrographic Convention. This was provided and the GMA appeared to be happy and have undertaken to take this forward. GPA have written to their parent ministry (Ministry of Transport, Works and Infrastructure – MoTWI) to engage in the process. A cabinet paper is being reviewed (July 2019) to put forward the case for membership.

INTERNATIONAL OBLIGATION OF THE GAMBIA

As an IMO member, they are fully aware of their obligations as a coastal state. They are now committed to putting in place an NHC that covers their MSI and data capture requirements, thus fulfilling IHO CB phase 1 & 2. However, currently they are unable to fulfil these obligations due to the lack of suitable equipment.

The UKHO are currently the recognized Primary Charting Authority (PCA) and are undertaking the Chart and Nautical Publication production on behalf of The Gambia. Following an IMO audit recommendation, a formal arrangement of cooperation is being discussed between the two parties.

There is a long-term vision that in the future The Gambia will undertake their own charting responsibilities.

CERTIFIED PERSONNEL

GMA

- 1 Cat 'A' Hydrographer

The Gambia Navy

- 12 staff trained in operating the GMDSS equipment

Department of Water Resources

- 1 MSc IWRM (specialization Hydrology)
- 1BEng Hydrology

National Environment Agency

- 1 MSc Climate Change
- 1 MSc GIS

HYDROGRAPHIC SURVEY & NAUTICAL CARTOGRAPHY CAPABILITY

GMA are the agency responsible for maritime matters with the GPA undertaking responsibilities for the ports and approaches. Currently, there is 1 member of GPA staff trained to Cat 'A' level. The Gambia does not currently have any surveying capability and any surveys conducted are contracted to third parties. Procurement of surveying equipment is in progress, but procurement procedures have delayed the acquisition. There has also been the misconception that the echo sounders fitted on the tugs and pilot vessel are suitable for providing survey data. The delegation pointed out that this equipment was not suitable, and the associated depths obtained didn't meet any recognized Hydrographic survey standards.

Nautical cartography (both paper and digital) is carried out by the UKHO on behalf of The Gambia, however there is no formal arrangement in place. Following the 2017 TV, the GPA undertook the responsibility of MSI coordinator being responsible for ensuring that any information relevant to nautical charting or nautical publications is communicated to the UKHO. They also act as the point of contact for all of The Gambian stakeholders. This process has not fully worked as the MSI coordinator has not been made aware of all relevant information.

MSI RESPONSIBILITY

The GPA accepted the role of MSI coordinator after the 2017 IHO TV. It was also established that the NAVAREA II coordinator (SHOM) had not received any information from GPA since the last TV, even though it was recommended that an email be sent every three months to maintain communications. It is evident that whilst MSI obligations are understood, there is still much to be done to develop this capability. Stakeholders currently communicate some information between them, but this is not formalised.

The GPA currently have VHF radio by which they can transmit information ship to shore, but this is currently only vessels that are entering or leaving Banjul Port. This information can include weather and piracy alerts.

The Gambian Navy, responsible for GMDSS (formally known as Banjul Radio) have not been able to fulfil this obligation since 2011 when the system ceased working. They are only able to monitor activity via AIS data. Banjul Radio currently has no VHF capability. The Navy also manages the Maritime Operation Radio Centre (MORC) where monitoring of vessel activity via a separate Seavision AIS system is undertaken. This incorporates the Coastguard element of their role. They have the ability to receive Inmarsat-C notices from the region. Any Navigational warnings received via Inmarsat-C are disseminated to the GMA and GPA Harbour Master. The information rarely reached the MSI coordinator.

The Department of Water Resources (DWR) provide meteorological data to all stakeholders. However, this data doesn't filter down to the MSI coordinator. As a result, no METWARNINGS have been issued for the region. The DWR are planning to establish VHF stations along the river to improve communication which may also be utilized for future MSI purposes.

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REPORT OF TECHNICAL VISIT TO THE GAMBIA

22-26 July 2019

Reference(s):

- A. IHO Publication M-2 *The Need of National Hydrographic Services* - Version 3.0.7 Jun 18
- B. IHO CB Procedure 9: *Guidelines to Conduct Technical Visits*
- C. IHO CB Technical Visit Report for The Gambia (2017)
- D. Gambia National Report, 15th EAthC meeting – Lagos, Nigeria Oct 2018
- E. IMO IMSAS Recommendations
- F. IALA Audit Recommendations

In 2017 an IHO TV was conducted by the UK Hydrographic Office (UKHO) and SHOM. The TV raised a number of recommendations to assist The Gambia in developing its capabilities.

This aim of this TV was to revisit those recommendations and to establish to what extent they have been addressed, focusing on MSI capabilities. The visit also aimed to identify where assistance can be provided to help The Gambia in its hydrographic capability development.

1. Background.

The EAthC CB coordinator reminded the 15th EAthC meeting in Lagos, Nigeria in 2018 that the follow up TV to the 2017 TV to The Gambia was still outstanding. Following discussions between UKHO (as PCA to The Gambia) and SHOM (EAthC CB coordinator) it was agreed that UKHO would fulfil the 2019 IHO TV.

2. Composition of the Team.

The RHC TV Team is comprised by:

Name	Role
Mr Chris Thorne, UK Hydrographic Office Head of Partnering and Engagement East Atlantic & Caribbean	Team Leader
Ms Lucy Fieldhouse, UK Hydrographic Office International Training & Capacity Building Manager	Co-team Leader

IHO Secretariat and UKHO liaised over the booking of Accommodation and Flights. Logistics including meeting arrangements and timetabling of the TV, were coordinated by the GPA.

PART A - OVERALL ASSESSMENT OF THE SITUATION IN REGION

3. Efficacy of the Technical Visit.

The terms of reference for this TV can be found at Annex A.

This TV was a follow up visit to assess the progress of recommendations raised during the TV conducted in 2017 by Mr Henri Dolou (SHOM) and Ms Cathy Tunks (UKHO). A review of the recommendations and a summary of the progress of each can be found in Annex K.

There has been little progress in implementing the recommendations from the 2017 TV. The greatest concern was the delay in implementing the NHC and the replacement of broken MSI equipment. It was clearly demonstrated to the visiting team that communication between local agencies although occurring can and should be improved with immediate effect. There is a desire for further progress and cooperation between these agencies and the TV discussions proved beneficial, raising a greater awareness of the capabilities of each stakeholder thus identifying areas where further cooperation and improvements can be made. They all fully support the immediate implementation of an NHC to support this and recognized the need to improve their MSI capabilities. Concern was expressed over resources available to replace broken equipment.

The TV team and the Gambian stakeholders felt that this visit represented a worthwhile investment by the IHO which was evidenced by the implementation of a NAVAREA warning and chart updates immediately after the team left Banjul.

4. Cooperative Arrangements and Potential.

a. Regional Organisations and Collaboration.

The Gambia is part of MOWCA (Maritime Organization of West and Central Africa) and PMAWCA (Port Management Association of West and Central Africa). The Team did not contact these organizations for this TV. Regional cooperation was evidenced by a Gambian delegation (including representative from both the GPA and GMA), visiting Monrovia Port in Liberia during the time of the TV to discuss best practice and share lessons learned.

b. Defense and Security Arrangements.

The Gambia Navy remains involved in Search and Rescue (SAR) and Fishery patrols, undertaking Coastguard duties. Their interest in hydrography has been emphasized again during this visit. The Gambia Navy are keen to work with the ports to develop the hydrographic capabilities of the nation by providing its ships as platforms. At present, The Gambia Navy do not have any hydrographic Cat 'A' or 'B' surveyors, and this is something that they would like to address. The potential for The Gambia Navy to fully meet its key role is limited due to lack of resource and funding to improve the GMDSS capability.

c. Primary Charting Authority.

The UKHO are currently the recognized Primary Charting Authority (PCA) for The Gambia.

This has never been formalized. The IMO audit recommended that The Gambia sign an MOU with the UKHO. This was emphasized by the TV and the GMA and GPA agreed to take this forward.

PART B – THE GAMBIA ASSESSMENT

5. RHC Involvement.

The Gambia is not currently a member of the IHO or EAthC. Associate Membership of the RHC was raised as a recommendation during the TV conducted in 2017. However, it is hoped that this will now be overtaken by events with The Gambia moving towards full IHO Membership. The Gambian Maritime Administration (GMA) is submitting a cabinet paper to lobby for the joining of the IHO.

6. Preliminary Liaison.

The GPA provided Mr Dominic Correa (Port Hydrographic Surveyor) and Mr Ansu Gibba (Public Relations Officer) as points of contact who aided the Team with this TV. Through their assistance, the necessary stakeholders were contacted, and meetings arranged. Mr Dominic Correa introduced the Technical team at meetings and outlined the reason for the visit including the main objectives.

The assistance provided by the GPA contributed directly to the success of the visit and much effort was put into arranging unscheduled meetings with newly identified stakeholders.

The TV team would like to record their sincere appreciation for this support.

7. Points of Contact.

Mr Dominic Correa confirmed that the details in the IHO publication P-5 require minimal updating.

The top-level organization is now The Ministry of Transport, Works and Infrastructure, who delegate responsibility for maritime issues to the Gambia Maritime Authority.

The Gambia Port Authority sit under the Gambia Maritime Administration and are currently responsible for the Aids to Navigation (AtoN) and MSI coordination.

Following the change in government and staff succession within the agencies, many of the key stakeholders from the 2017 TV were no longer in post. Their replacements were aware of the 2017 visit but not of the full visit recommendations. Therefore, the TV team ensured each new stakeholder was fully aware of IHO Publication M-2 and the importance of an NHC and MSI.

DESCRIPTION OF MARITIME ACTIVITIES

8. National Maritime Affairs.

It was widely acknowledged amongst the stakeholders that the lack of maritime culture in The Gambia has thus far hindered the maritime development of the country. This lack of awareness is evidenced by the construction of a bridge across the river Gambia at the town of Farafenni. The failure of clear communication between key stakeholders has resulted in the clearance height of the bridge now impeding the transit of vessels along the river, including the port dredging vessel and a cruise ship that had previously transited the river.

There are hopes that a greater awareness of the importance and the opportunities of the maritime (and riverine) environment and can offer is occurring. The government is keen to use the River Gambia as a corridor to central Africa and an aspiration to be the route of choice. To realise this ambition, a River Revitalisation Project will be undertaken that will look at all aspects of the river including the collection of bathymetric and water column data.

The MoTWI are responsible for National Maritime Affairs but delegate the responsibility to the GMA. The GPA are responsible for the Ports and approach channels (along with AtoN) and currently contract out any hydrographic surveys.

The Gambia Navy are responsible for Search and Rescue and policing Gambia waters.

Outline of Gambia National Maritime Structure (see Annex E).

9. Trade and Maritime Traffic.

This report provides updated details of trade and maritime traffic for The Gambia following the 2017 IHO TV. Full details may be found within the 2017 TV report.



Banjul Port – Tug and Pilot capability

The following information relating to Banjul Port was provided by Naffi Macdouall the Director Corporate Services & Business Development at GPA. These figures demonstrate an increase in trade and associated ship movements in and around Gambian waters. This increased volume further emphasise the need to ensure safe navigation.

IMPORTS:	2017 TOTAL	2018 TOTAL
FCLs	1,334,088	1,545,600
MTs	470	193
Bagged Cement	1,000	20,191
Bulk Cement	420,891	428,990
Bagged Rice	51,501	60,760
Bulk Rice	82,951	50,796
Bagged Sugar	8,032	
Wheat Grains	55,575	41,366
Basalt	37,356	8,664
Petroleum Products		
Vehicles	55,292	30,919
Total Imports	20,471,56	2,187,479

EXPORTS:		
FCLs	277,536	139,200
MTs	94,137	138,479
Wheat Bran		
G-nut oil (Crude)		
Vehicles	495	109
Bagged rice	2,000	
Total Exports	374,168	277,788

TOTAL CARGO	2,421,324	2465267
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Number of Ship calls to Banjul Port:

CALLS	TOTAL 2017	TOTAL 2018
CELLULAR	123	137
RO/RO	26	10
DRY-BULK	102	71
CRUISE	1	7
GENERAL CARGO	8	5
LIQUID-BULK	38	54
TOTAL	298	284

10. Responsibility for Safety of Navigation.

GPA is the authority responsible for:

- Maintenance of channels - a small dredger is used to maintain depths at quays

(Contractors are used for main dredging and survey programmes).

- Provision and Maintenance of Aids to Navigation. It is suggested that in 2 years the responsibility for this will move to GMA.
- VTS – Harbour Masters office (part of GPA) currently uses VHF to communicate to with vessels but the GPA are planning to purchase a VTMS in the near future.
- Promulgating safety information passed via GMA from The Gambian Navy pertaining to off shore incidents such as piracy activity.
- MSI Coordinator role.
- Providing data to PCA – UKHO for chart correcting purposes.
- The GPA are in the process of considering the need for a data storage capability.

GMA is the authority responsible for:

- IMO activity.
- the removal of wrecks.
- Port Inspections.

DWR is the authority responsible for:

- the maintenance of tidal gauges and provision of tidal information.
- meteorology.

11. Defence Force Responsibilities.

The Gambia Navy is responsible for Search and Rescue (SAR), as there is no specific coastguard service; fishing patrols and countering illegal trafficking. In 2007, a GMDSS Radio station was installed at their headquarters in Banjul, the receiver is located in a separate location. Since 2011, the GMDSS service has not been functioning, this has been attributed to ongoing power cuts damaging both the transponder and the receiver. Attempts to go back to the equipment provider to repair the equipment have been unsuccessful. The VHF equipment has also failed and no longer operational, severely limiting the Gambian Navy's capabilities.

Monitoring AIS (via marinetraffic.com) is currently all the GMDSS team are able to do.

The Gambian Marine Operation Radio Centre (MORC) is located at the Naval Command (a separate location in Banjul). There is an AIS 'Seavision' system that was installed by the US Navy in 2012, which is updated and sponsored by the US under NAVAF (the Naval part of NAVCOMM). The Gambian Navy use this to monitor vessels and illegal fishing. The Gambian MORC take part in annual Defence exercises with all Western African Coastal states from Gabon to Senegal to practice the management of regional events. Regional cooperation between navies is good however, communication can be impeded due to technological issues and so is achieved through whatever means available (e.g. social media).

The Gambian Navy do not have any hydrographic surveying capability.

12. Coastal Zone Management and Environmental Protection.

The National Environment Agency (NEA) remains responsible for environment issues and Coastal Zone Management continues to be an area of focus for the Agency. Following the success of the Global Climate Change Alliance (GCCA) project that was undertaken with EU

funding from 2014-17, The Gambia are proposing a subsequent project, the GCCA+. The project will look at Coastal Zone Management in The Gambia seeking sustainable development and the supporting of coastal communities. Stakeholders for the steering committee and the technical working group of this project have been identified however, the MoTWI has been omitted. It is apparent that there is much cross over between this project and its coordination and the development and the subsequent benefit from establishing The Gambia NHC. It was the suggestion of the TV team that the GPA should be included in the Technical Working Group. It is hoped that the first meeting of this group will be held in September 2019.

Under this project the requirement for a bathymetric/oceanographic survey of the coastline has been outlined and funding is said to be in place. Collaboration with the GPA is vital to avoid duplication of effort, shared resources and the sharing of technical knowledge and data for the benefit of The Gambia.

The Department of Water Resources (DWR) and the National Disaster Management Agency are also involved in the management and monitoring of the coastal and riverine environment. Both agencies have monitoring programmes which they are looking to extend, such as the deployment of drones for aerial and automated water level monitoring. The contribution of these agencies to the NHC will be vital to ensure the efficient coordination of effort and resources.

OUTLINE C-55 ANALYSIS

13. Status of surveys within the National Maritime Zone.

- The Gambian Offshore and Coastal Waters

In 2012/13 a seismic survey was conducting to establish the continental shelf of 7 of the Western African states and top support the exploration for oil and gas resources. This data has not yet been made available for assessment by The Gambia or PCA for safety critical information.

A further survey is currently being undertaken and is expected to be concluded in November 2019.

It was recommended that the NHC seek to get access to this information and share with relevant stakeholders.

- River Gambia

Survey status of the River Gambia is poor with surveys dating from 1941. It is hoped that with the implementation of the River Revitalization Project and the procurement of hydrographic surveying equipment, surveying of the River will be undertaken.

- Banjul Port

Includes data from 1941 – 2018. The 2018 data is largely alongside berths and within the approach dredged channel. The dredged areas are not maintained.

14. Collection and Circulation of Nautical Information.

Acknowledgement that data collection outside of the general port is poor and little activity has taken place in the river region. Circulation of nautical information can be limited with only some information reaching the PCA. This is evidenced through the completion of the bridge at Farafenni, impacting navigation of the river.

The TV identified clear evidence that information relating to AtoN that were not working, has not been passed to the PCA.

15. Survey Capability.

Survey capability has not improved since the previous TV. The GPA currently have echo sounders on their Pilot vessels though these are used only to check depths alongside and within dredged areas. There is a need for an awareness at higher levels that this equipment is not suitable for providing Hydrographic survey data to modern standards. There is still an urgent need for hydrographic surveying equipment to be acquired to allow the skills of the Cat 'A' surveyor to be utilized.

The GPA are currently investigating procurement of a survey grade single beam echosounder (single frequency 200KHz) and 2 x RTK GPS receivers plus mobile phone telemetry and PDS2000 survey acquisition and processing software to permit them to undertake surveying activity. Full surveys (pre and post dredge) have been undertaken by the contracted survey organization due to the lack of capability.

Dominic (Correa) is a Cat 'A' trained hydrographic surveyor who is keen to train his two assistants but requires the equipment to do so.

16. Independent Chart Production Capability.

No independent Chart production is taking place. Current chart coverage is insufficient for the river as it is based on 1941 data and is not referenced to modern vertical or horizontal datums. The Land and Survey Department has relatively modern mapping that is referenced to WGS84 datum that could be used to improve charting should modern hydrographic survey be captured. During the TV discussions, the GPA mentioned their long-term aspirations to eventually take over the responsibility for the charting of The Gambia. This is clearly a long-term vision which will require significant funding and support as they do not have any skills in this area.

PROPOSALS FOR COORDINATION AND CAPABILITY BUILDING

17. National Hydrographic Committee.

A key recommendation from the TV conducted in 2017 was the establishment of an NHC. Efforts to achieve this are ongoing but stalled on the misunderstanding that hydrographic survey equipment should be purchased before the NHC was established. GPA have identified the necessary stakeholders who will make up the NHC and there have been individual discussions, but so far full coordination is lacking.

It is a priority recommendation of this TV that an NHC is formed immediately ahead of the procurement of any equipment so that coordination and priorities may be established.

18. Phase 1 Hydrographic Capability: MSI Organization and GMDSS.

a. MSI (Navigational Warnings).

Little to no MSI data is being promulgated. This is largely due to the fact that relevant information is not reaching the MSI coordinator and agencies not realizing who should receive the information.

It was noted from the IALA audit and observations taken during the TV that several AtoN were either missing or not working.

The TV discussed this with all agencies and have recommended that the NHC is establish as an urgent requirement, to ensure that all stakeholders inform the MSI coordinator of relevant issues.

It was felt that the initial NHC meeting should include all senior members of each organization so that terms of reference could be agreed, and responsibilities allocated. Subsequent NHC meetings could then involve technical members.

b. Information on Ports and Harbors.

The TV discovered that plans were being developed to improve the infrastructure along the river Gambia, with the potential development of new ports to realise the aspirations of the River Revitalization Programme. This would involve funding from Dubai Ports. This information was not known by all stakeholders.

This once again helped emphasize the need for the NHC to become operational as soon as possible.

c. GMDSS Status

The Gambia currently does not have any GMDSS capability. The GMDSS system which was installed in 2007, has not functioned since 2011. The Gambian Navy are responsible for the GMDSS system but do not have funding to purchase replacement equipment.

Table 1: Status of GMDSS in local waters.

Master Plan	A1 Area	A2 Area	A3 Area	NAVTEX	SafetyNET	Notes
No	No	No	No	No	No	1 to 8

Notes:

1. Currently no GMDSS capabilities, therefore geographic limitations are not an issue.
2. No NAVTEX station operational
3. Funding is required to improve GMDSS capability.

d. Other Services.

Note: The TV Team were informed that currently Senegal also do not have GMDSS capability.

19. Phase 2 Hydrographic Capability: Survey.

a. Provision of Survey Data.

The Gambia currently has no capability for the collection of Hydrographic Survey data. In 2018, a contract survey was undertaken in the entrance channel and alongside berths in Banjul port. The survey data produced was passed to the PCA (UKHO). This data resulted in a New Edition of chart 608.

b. Survey Capability.

The Gambia currently has no hydrographic survey equipment capability, but they do have one trained Cat 'A' hydrographic surveyor. It is highly likely that due to the time that has expired since the Cat 'A' surveyor was trained, that a period of refresher training will be required.

We are aware that ports in the West Africa region have regular meetings to ensure that they are aware of regional activity and best practice. There was a meeting of 22 ports in Monrovia (Liberia) during the period of the TV. The Gambia were represented by several of the stakeholder agencies. This type of regional meeting could be used to request assistance.

Other EAHC members in the region could be approached to request assistance.

c. Potential for Regional Activity.

With the exception of the regional port meetings, minimal regional activity is undertaken and there is a limited awareness of activities being undertaken by the neighbouring state.

20. Phase 3 Hydrographic Capability: Chart Production.

There remains no chart production capability in The Gambia. The UKHO is the PCA for The Gambia waters. In accordance with the IMO recommendations following the IMSAS audit conducted in 2018, an arrangement for cooperation between the UKHO and the Ministry of Transport, Works and Infrastructure is being considered. The GPA have a sound understanding

of the importance of sending information to their PCA to ensure that nautical information is regularly made available worldwide.

Under the ‘Corridor Management plan’ which seeks to create economic clusters around transport arteries; a River Revitalisation Project (RRP) is being undertaken that will look to do an analysis of the river. From this, it is hoped that a new bathymetric survey will be conducted that will update the existing 1941 data that is currently charted on the fathoms and feet chart.

For chart coverage: Annex H

21. Summary of the Assessment of the National Hydrographic Capability.

Table 2 summarizes the assessment of the national hydrographic capability.

Table 2: Assessment of National Hydrographic Capability.

IHO Member	RHC	NHC	Phase 1 Capacity	Phase 2 Capacity	Phase 3 Capacity	Notes
No	EAtHC Observer	No	Partial	Partial/No	No	1 to 6

Notes:

1. There is progression towards the formation of an NHC which will enhance cooperation and coordination of activities. The Chair of the NHC will be the parent ministry, the MoTWI. The GMA will oversee the IMO and Merchant Shipping Obligations and the GPA will undertake the MSI coordinator role and be the primary contact with the PCA.
2. The GPA currently only have echo sounder equipment available to them for depth checking at berths and in the approaches. Procurement of survey equipment is underway. The GPA have one Cat ‘A’ trained Hydrographic Surveyor.
3. Successful procurement of the survey equipment will allow the GPA to undertake surveying of the Port, Approaches and the river. Contracted surveys have taken place as part of a dredging Programme but no systematic survey programmes are in place.
4. Three charts of Gambia are produced by the PCA (UKHO). Communication between the Gambia and the PCA has improved with the passing on of some chart correcting information. This TV has highlighted the importance of this process and since the meeting more data has been provided. The River Chart of the Gambia remains a fathoms and feet chart and is based on 1941 survey data. If, as it is hoped, the river will increasingly be used by vessels, this chart will not be fit for purpose without the acquisition of new survey data.
5. It is highly likely that GPA will require RHC assistance and advice with equipment management
6. It is unlikely that The Gambia will have the resource to provide assistance to other states.

PROPOSALS FOR ASSISTANCE

22. Training

MSI training is required to ensure that the current coordinator is not a single point of failure. A regional course would benefit The Gambia as well as others in the EAthC region.

On procurement of suitable hydrographic survey equipment, suitable training will be required for those stakeholders likely to use it (GPA, NAVY, DWR etc.).

23. Equipment.

The establishment of the NHC should urgently review the type of survey equipment currently in the process of procurement to ensure it meets the needs of all stakeholders. It is highly likely that the GPA will have funds available to purchase suitable equipment.

The GMDSS and VHF equipment held by the Navy needs urgent replacement to ensure that The Gambia can fulfil its full SOLAS MSI commitments. The NHC should investigate options for funding this.

The GPA are in the process of procuring a VTMS. This facility could provide a monitoring system that could support MSI coordination in Gambian waters and it should be discussed with NHC stakeholders

24. Funding.

Funding is an issue for The Gambia. Most of the Organisations visited had a set budget that was barely sufficient to fulfil their current activity.

The exception appears to be the GPA who are able to fund some improvements.

There was evidence that the GPA and GMA were holding meetings with the African Development Bank in an effort to secure funding to progress the River Revitalisation Project.

IHO Publication M-2 is widely known in the GMA and GPA. The document was shared with the new Deputy Permanent Secretary of the MoTWI to assist in the formation of the NHC. It outlines the scope and the benefits that the committee will bring and also the importance of hydrography to coastal states. The role of IHO CBSC was outlined and the proposal process for Capacity Building Submissions was also discussed with the GPA and GMA.

FOLLOW-UP ACTIONS

25. Immediate Formation of an NHC and Development of a National Hydrographic Strategy.

Stakeholders of the NHC have been recognized and updated following this TV. All the stakeholders agreed that an NHC should be established as a matter of urgency. It was also agreed that the initial meeting should include all the most senior members from each stakeholder group to ensure terms of reference, roles and responsibilities are agreed. The GPA were tasked with making the arrangements for the initial NHC and the MoTWI would be the Chair. Example terms of reference were left with GPA for their consideration.

It was emphasized that all stakeholders need to keep the MSI coordinator informed of relevant activity.

GPA are to liaise with all stakeholders and arrange first meeting of the NHC. Action: **GPA.**

26. Encouragement of IHO and RHC Membership.

Progress is being made towards the Gambia becoming an IHO Member with the drafting of a cabinet paper in progress. IHO secretariat should ensure that the progress is supported and attendance at EAHC by The Gambia is encouraged. Action: **RHC and IHO Secretariat.**

27. Encouragement of Effective and Timely Collection and Promulgation of Hydrographic Information.

a. All stakeholders are now aware of the MSI coordinator and the role he plays. Whilst in country, up to date tidal data was passed to the PCA for action, and restricted area information was sent to the NAVAREA II coordinator and the PCA. Action: **Technical Visit Team.**

b. The TV reconfirmed that the MSI coordinator (GPA) should contact the NAVAREA II coordinator at least once every 3 months to maintain communication. Action: **MSI Coordinator.**

28. Encouragement of Development of Hydrographic Capability.

Note areas where the Hydrographic Unit merits assistance:

- a. The NHC should review the proposal for the purchase of survey equipment to ensure that the planned equipment is able to collect data suitable for the majority of NHC stakeholders. Action: **NHC Members.**
- b. Options for purchase of suitable survey equipment and on the job training which could include temporary secondments, to be discussed with CBSC. Action: **GP and CB coordinator EAHC.**
- c. Options to purchase suitable GMDSS and VHF equipment to be operated by the Navy. Action: **NHC Members.**

- d. The purchase of a central data storage facility that allows access by all NHC stakeholders should be considered.

CONCLUSIONS

29. Cooperative Opportunities.

It is recognized that funding is a real issue for The Gambia, but this TV has proved to be very successful in discussing collaboration between The Gambia stakeholders. There is now a real understanding of the value of an NHC and the benefits it will deliver by working together. There is a greater realization of the need to ensure changes in the maritime area are reported to the MSI coordinator for onward dissemination to the PCA and NAVAREA coordinators. The EAthC should investigate the option of providing further MSI training courses with the priority of ensuring attendance by The Gambia.

It would also be highly beneficial if opportunities for Cat 'A' and Cat 'B' Hydrographic Survey training were identified. The Gambia are not likely to be in a position to pay for this training.

30. National Hydrographic Committees (NHCs).

The establishment and continued operation of an NHC in The Gambia is essential to ensure the long-term improvement of MSI within the Gambia.

With the correct focus and management, the NHC would be well placed to identify solutions to issues raised as well as prioritizing requirements to meet all stakeholders' requests. This will prevent duplication of effort and hopefully ensure that the MSI coordinator is aware of all relevant information.

The initial meeting should involve senior management from each organization to ensure terms and conditions and roles and responsibilities are agreed. The meetings would be chaired by the MoTWI and the initial meeting would be followed by meetings between more technically minded staff.

RECOMMENDATIONS

31. Actions.

- a. Ensure all relevant data is passed to the MSI coordinator in a timely manner.
- b. MSI coordinator to ensure regular contact (minimum of once every three months) is maintained between them, the PCA and the NAVAREA II coordinator.
- c. Identify funding to purchase a replacement GMDSS and VHF equipment.
- d. Encourage the purchase of VTMS by GPA to support MSI capability in the region.
- e. The EAthC CBC should propose a regional MSI course to include The Gambia
- f. Requirement to establish the NHC as defined by the 2017 TV.
- g. Set the terms of reference for the NHC to include all stakeholder requirements
- h. Formalise the roles and responsibilities of those involved in the NHC focusing on the needs of SOLAS and ensuring the reduction in duplicating effort.
- i. Encourage data sharing between stakeholders.
- j. The NHC to get access to the Seismic survey data so that all stakeholders are given access and any relevant information is passed to the PCA.
- k. Consider the implementation of a data storage system that allows access by all relevant stakeholders so that data can be collected once and used many times for the benefit of The Gambia.
- l. The Gambia should become a full member of the IHO.

32. RHC Follow up Actions.

- a. Encourage GPA to report at the next EAthC its status on MSI delivery and any further developments.
- b. Identify training opportunities (including on the job training) for Cat 'A' and Cat 'B' Hydrographic survey courses.
- c. Propose regional MSI course.

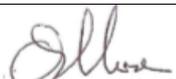
33. Follow up Opportunities.

16th EAthC meeting 28 Sept – 2 Oct 2020 Lisbon, Portugal.

34. Preparations for Next RHC Conference.

Note specific recommendations for liaison action by the RHC Chair.

- a. Last Technical Visit Assessment
- b. Technical Visit Recommended Actions

DATE	01 October 2019
RHC Technical Visit Team Leader	Mr Chris Thorne
SIGNATURE	

Annex List:

- A. Terms of Reference of the RHC Technical Visit Team.
- B. Summary of Events
- C. List of Contacts
- D. Technical Visit Photographs
- E. Outline of Gambia National Maritime Structure
- F. P-5 IHO Yearbook Template update
- G. PCA Chart and ENC Coverage
- H. Coastal State report to last RHC meeting
- I. Update on 2017 TV Recommendations

DISTRIBUTION: Chair RHC

INFORMATION: IHO Secretariat / visited coastal State

TERMS OF REFERENCE OF THE RHC TECHNICAL VISIT TEAM

1. The Technical Visit Team, comprising members of the staff from the UK Hydrographic Office, are to carry out a visit to The Gambia to discuss issues of mutual interest in the fields of hydrography and maritime safety information (MSI).

Preparation.

2. The members of the Technical Visit team, with the assistance of the staff of The Gambia Port Authority, are to plan the team visit having obtained access to material available from each related organisation, the International Hydrographic Organisation Secretariat, and the information supplied by The Gambia.

Work Objectives.

3. The Team is to:
 - Obtain access to decision making levels of government in each country visited and liaise with senior officials, emphasizing the importance of hydrography to coastal states and, hence, the need to include hydrographic and associated charting activities within National Plans;
 - Assess the National capacities to plan and execute the collection and rendering of hydrographic data to enable the production of charts and publications both locally and through the supply of data to Hydrographic Offices with international chart folios;
 - Consider and advise on measures which can be taken to improve the capacity of nations to carry out the above;
 - Emphasize the basic importance of a national system for the collection of data, such as engineering drawings and local Notices to Mariners, which have an effect on the interests of mariners;
 - Advise on the assistance to be gained from close liaison with the IHO, IMO and funding agencies to enable viable and sustainable capability to be maintained;
 - Assess the development and progression on the recommendations raised under the IHO Technical Visit conducted in 2017.

Report.

4. A report on the activities and recommendations of the Team is to be submitted to the Chair of the RHC (Regional Hydrographic Commission).

SUMMARY OF EVENTS FOR THE VISIT TO THE GAMBIA

Date	Organisation	Attendees
22.07.2019 am	The Gambia Ports Authority (GPA) (Ministry of Transport, Works & Infrastructure)	Managing Director GPA Deputy Harbour Master
22.07.2019 pm	The Gambia Maritime Administration (GMA) (Ministry of Transport, Works & Infrastructure)	Technical Advisor Senior Marine Engineer Assistant Registrar
23.07.2019 am	Department of Water Resources (DWR) (Ministry of Fisheries)	Deputy Director DWR Chief Meteorologist Senior Hydrologist Hydrologist
23.07.2019 pm	The Gambia Armed forces and The Gambia Navy	CO Navy Command GN Staff Officer Joint Services, Navy Headquarters GN
24.07.2019 am	National Environment Agency (NEA)	Executive Director NEA GCCA+ Coordinator NEA
24.07.2019 pm	Department of Lands and Survey (DoLS)	Director DoLS Senior Surveyor Principal Surveyor
24.07.2019 pm	Geological Department (Ministry of Petroleum & Energy)	Assistant Director Geological Dept.
24.07.2019 pm	National Road Authority (NRA)	Coordinator for the Sene-Gambia Bridge
25.07.2019 am	Ministry of Transport, Works and Infrastructure	Deputy Permanent Secretary
25.07.2019 pm	National Disaster Management Agency (NDMA)	Executive Director NDMA Deputy Director NDMA Procurement Officer Monitoring & Education Officer
25.07.2019 pm	The Gambia Ports Authority (GPA) (Ministry of Transport, Works & Infrastructure)	Deputy Managing Director GPA Hydrographic Surveyor Deputy Harbour Master

CONTACT LIST

Organisation	Name	Contact Number	Postal / Email Address
The Gambia Ports Authority Liberation Ave. PO Box 617, Banjul	Managing Director Ousman Jobartheh		
	Deputy Managing Director Mr Alhaji Cherno Ceesay	+220 422 40 39	acesay@gambiaports.gm
	Deputy Harbour Master Mamparteh Dampha		
	Hydrographic Surveyor Dominic Correa		correadominic@yahoo.co.uk
The Gambia Maritime Administration info@gambiamaritime.org	Technical Advisor Captain Gabriel Ndow		gabyndow@gmail.com
	Senior Marine Engineer Gumbo N Touray		gntouray@yahoo.com
	Assistant Registrar Mr Falu Sey		serignfalu@gmail.com
	Mr Ousma Touray Pomse		Ousfanaratouray03@yahoo.com
Department of Water Resources	Deputy Director Mr Foday Couleb		Maoconfe89@yahoo.com
	Chief Meteorologist Dr Peter Gibba		gibbapeter@gmail.com
	Senior Hydrologist Mr Landing Bojang		Imalickchi@gmail.com
	Hydrologist Ms Sainabou Jagne		Sainaboujagne80@gmail.com
Gambia Navy	CO Navy Command – Lt Cdr Jobe		
	Staff Officer Joint Services Navy HQ – Lt Jallow		
	Chief Petty Officer Baldeh		
National Environment Agency	Executive Director Mr Dodou Trawally		dtrawally@gmail.com
	GCCA+ Coordinator Mr Aruna Jobe		arunajobe@gmail.com

Department of Lands and Survey	Director Mr Kebba Ceesay	+220 996 88 55 +220 712 22 89	ckebba@yahoo.com
	Senior Surveyor Mr Baba Cham	+220 990 90 62	babelmeldemba@gmail.com
	Principal Surveyor Mr Modou Joof	+220 756 96 69	Modou.joof2011@gmail.com
Geological Department PMB 227 S/K Post Office S/K The Gambia	Assistant Director Mr Alieu Jawo	+220 993 06 92	alieujawo@hotmail.com
National Road Authority	Coordinator of the Sene-Gambia Bridge Mr Lamin Bojang		starbojang@gmail.com
Ministry of Transport, Works & Infrastructure MDI Road Kanifing The Gambia	Deputy Permanent Secretary Mr Louis Moses Mendy	+220 996 81 97 +220 990 16 79 +220 700 04 38	louismosesm@gmail.com
National Disaster Management Agency	Executive Director Mr Sanna Dahaba		saanabairo@gmail.com
	Deputy Director Mr Serign Modou Joof	+220 991 62 22	joofserignmodou@gmail.com
	Procurement Officer Mr Tony Mendy		Tmendy15@yhoo.com
	Monitoring & Education Officer Mr Kawsu Bassow		Kawsu2010@yahoo.com

TECHNICAL VISIT PHOTOGRAPHS



The Gambia Port Authority (GPA)

L-R: GPA Hydrographic Surveyor Dominic Correa, Deputy Harbour Master Mampateh Dampha, Chris Thorne (UKHO), Lucy Fieldhouse (UKHO)



Gambia Maritime Administration (GMA)

L-R: Technical Advisor Captain Gabriel Ndow, Dominic Correa (GPA), Senior Marine Engineer Gumbo N Touray, Assistant Registrar Mr Falu Sey, Mr Ousman Touray Pomse, Chris (UKHO), Lucy (UKHO)



Department of Water Resources

L-R: Lucy (UKHO), Chief Meteorologist. Dr Peter Gibba, Dep. Dir. Mr Foday Couleb, Hydrologist Ms Sainabou Jagne, Chris (UKHO), Dominic (GPA), Snr Hydrologist Mr Landing Bojang



Gambia Navy

L-R: Chris (UKHO), Lt Jallow, Dominic (GPA), Lucy (UKHO)



Gambia Navy

L-R: Dominic (GPA), Lucy UKHO), Lt Cdr Jobe, Chris (UKHO), ?



National Environment Agency

L-R: Lucy (UKHO), GCCA+ Coordinator Mr Aruna Jobe, Ansu (GPA), Executive Director Mr Dodou Trawally, Dominic (GPA), Chris (UKHO)



Department of Lands & Survey

L-R: Dominic (GPA), Principal Surveyor Mr Modou Joof, Ansu (GPA), Director Kebba Ceesay, Chris (UKHO), Snr Surveyor Mr Baba Cham, Lucy (UKHO)



National Road Authority

L-R: Coordinator for the Sene-Gambia Bridge Mr Lamin Bojang, Ansu (GPA), Chris (UKHO), Dominic (GPA), Lucy (UKHO)



Ministry of Transport, Works & Infrastructure

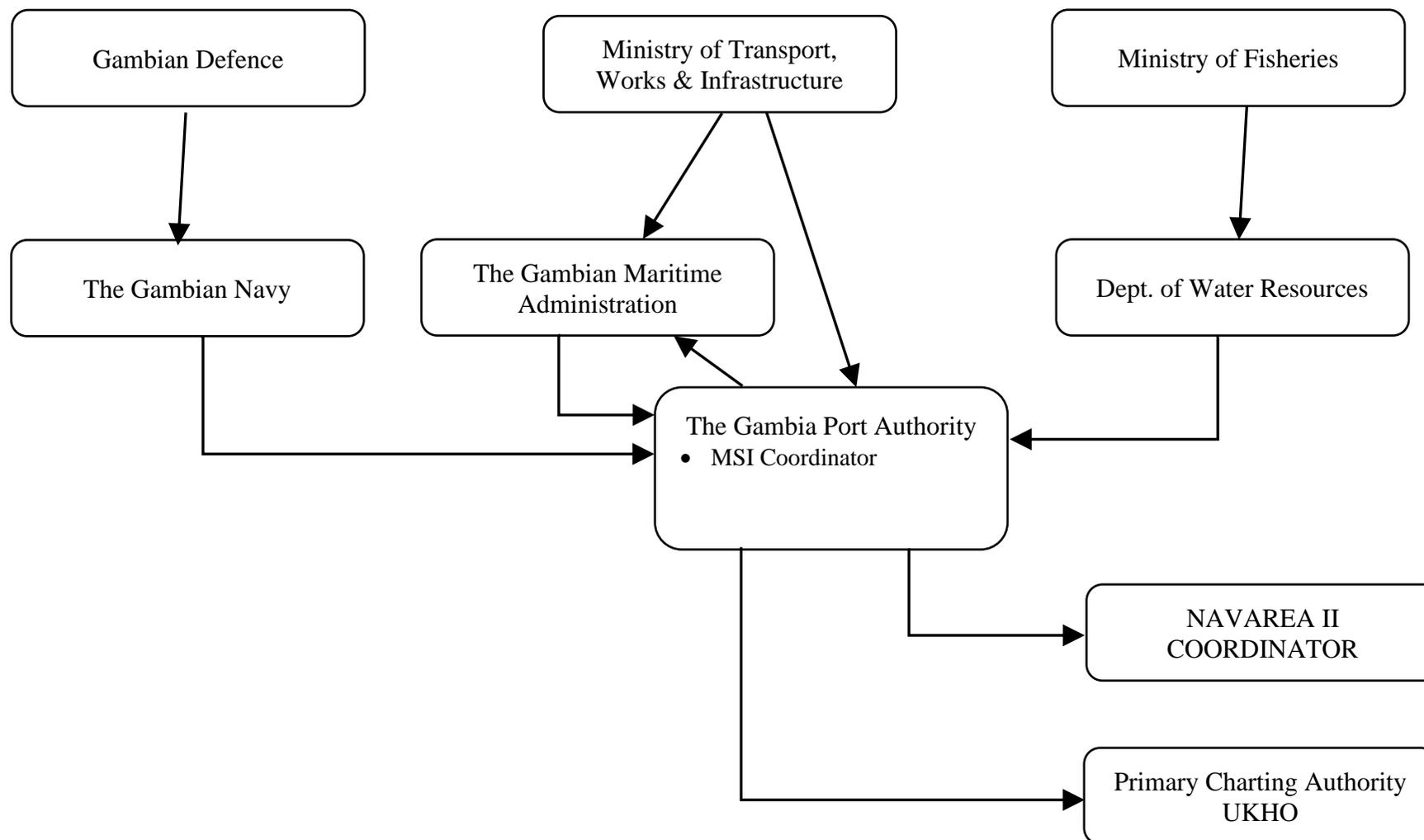
L-R: Dominic (GPA), Deputy Permanent Secretary Mr Louis Moses Mendy, Lucy (UKHO), Chris (UKHO)



National Disaster Management Agency

L-R: Deputy Director NDMA Mr Serign Modou Joof, Chris (UKHO), Executive Director NDMA Mr Sanna Dahaba, Lucy (UKHO), Ansu (GPA), Procurement Officer NDMA Mr Tony Mendy, Dominic (GPA), Monitoring and Education Officer Mr Kawsu Bassow

OUTLINE OF GAMBIA NATIONAL MARITIME STRUCTURE



P-5 IHO YEARBOOK TEMPLATE UPDATE

Gambia (Republic of The) / Gambie (République de)

Country information / Informations sur le pays / Información sobre el país

National day -Fête nationale -Fiesta nacional	18 February
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GAMBIA PORTS AUTHORITY

Contact information / Informations de contact / Información de contacto

National Hydrographer or equivalent -Hydrographe national ou équivalent -Hidrógrafo Nacional o equivalente	Gambia Ports Authority (G.P.A.) Capt Kulay MANNEH Postal address: G.P.A. 1 Liberation Avenue , BANJUL, Gambia (Republic of The) Tel: +220 422 9940, +220 997 7038 Fax: +220 422 7268 E-mail: info@gampiports.gm and kmanneh@gampiports.gm
Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	Hydrographic Engineer, Dominic CORREA Tel: + 220 4227 268, +220 9962853 Fax: + 220 4227 268 E-mail: info@gampiports.gm and correadominic@yahoo.co.uk
Web site -site web -sitio web	http://www.gamports.com

Agency information / Information sur l'agence / Información sobre la agencia

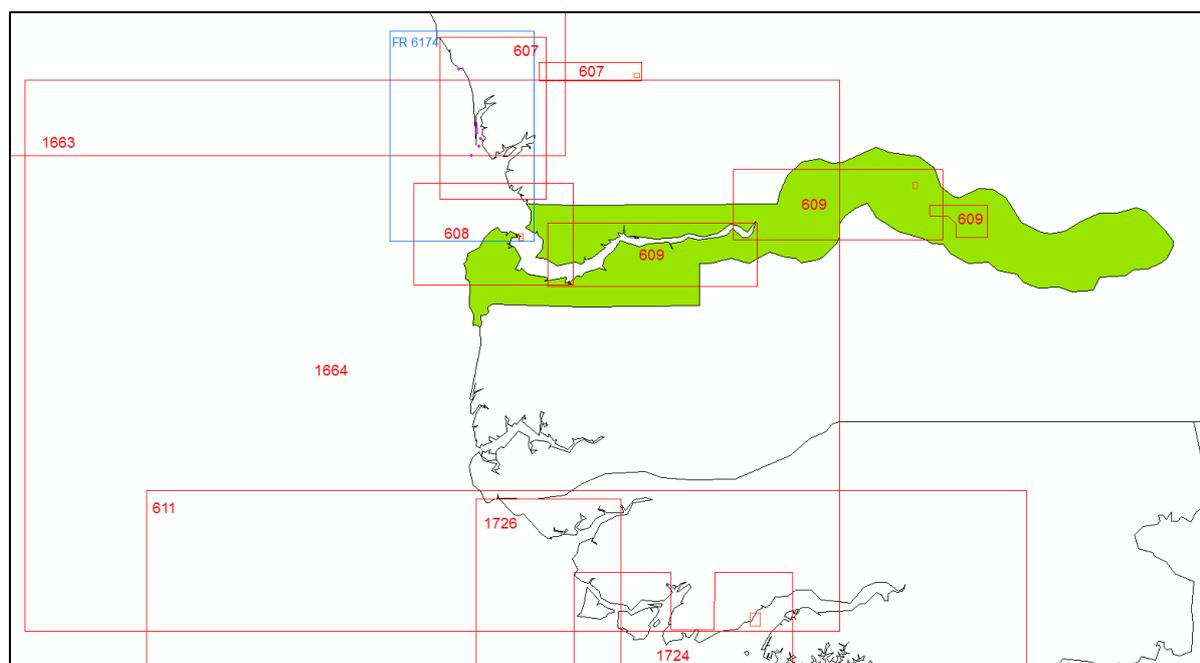
Date of establishment -Date de mise en place -Fecha de constitución	1972
Top level parent organization -Organisme mère -Organización asociada de nivel superior	Gambia Port Authority/ Harbours Dept. GPA is under the Ministry of Works, Infrastructures and Transport
Principal functions of the organization or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o el departamento	Conducting hydrographic/bathymetric surveying Maintenance of Aids to Navigation
Total number of staff employed -Effectifs totaux -Número total de personal empleado	For hydrography: 1 (CAT B and A) + 1 Assistant
Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas	1. INT 1954 (= FR 7389 and GB 1664)
Total number of paper charts published -Nombre total de cartes papier publiées -Número total de cartas de papel publicadas	1. GB 1664 – FR 7389 – INT 1954 (1: 342 000) 2. GB 608 (INT 1996 next NE) (1: 75 000) 3. GB 609 (1: 100 000) 4. FR 6174 (1: 100 000)

Information for this organisation continues on next page.

*Les renseignements sur cet organisme continuent à la page suivante.**La información sobre esta organización continúa en la página siguiente.*

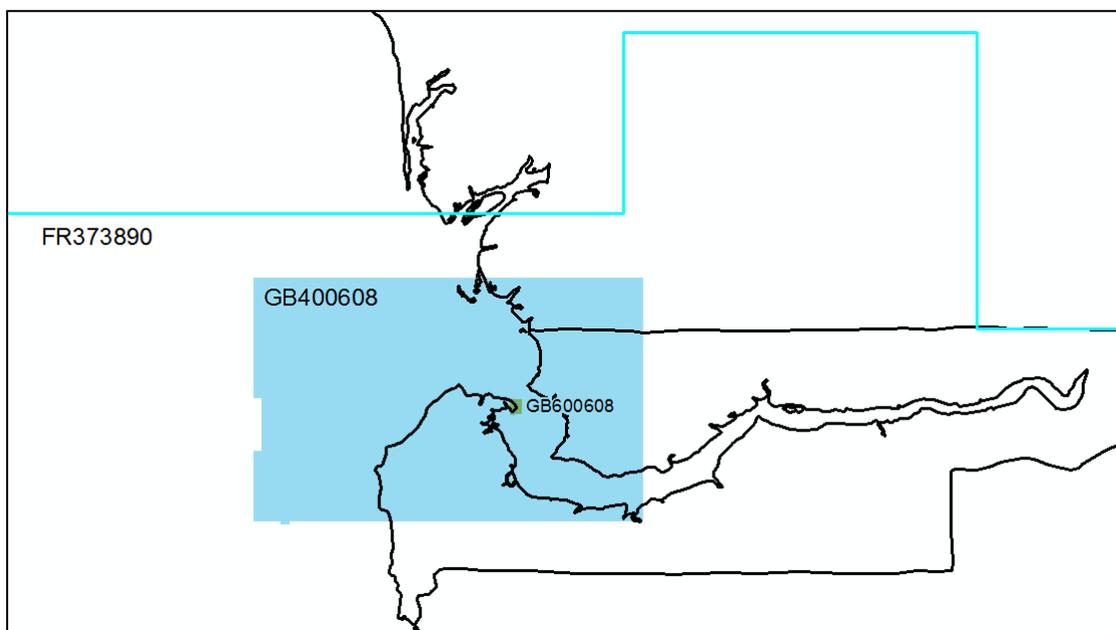
CHART AND ENC COVERAGE

Chart Coverage



Scale	Title	Country	Publication / Edition
1:342 000	Du fleuve Saloum à Ilhéu de Caió	FR: 7389 (INT 1954)	Pub: 1997 Ed: 1
1:350 000 1:342 000 (Lat 12°57')	Rivière Saloum to Ilhéu de Caió	GB 1664 (INT 1954)	Pub: 2002 (adaptation of FR7389) Ed: 1
1:100 000	De Joal à Bathurst	FR: 6174	1959
1:75 000 (Lat 13° 30') 1:12 500	River Gambia Entrance Banjul	GB 608 (INT 1996)	Pub: 1977 Edition: 3
1:100 000 (Lat 13°30') 1: 25 000 1:7 500	River Gambia Albreda to Kuntaur Kuntaur Anchorage off Mac Carthy's Island	GB 609	Pub: 1942 (Fathoms and Feet)

ENC Coverage



ENCs	Producer	Scale	Issued	Last update
FR373890	France	180 000	13/06/2017	15/07/2019
GB400608	UKHO	45 000	04/10/2018	31/07/2019
GB600608	UKHO	12 000	09/11/2018	08/02/2019

COASTAL STATE REPORT TO LAST RHC MEETING

15th EAtHC – CHAtO Meeting
Lagos, Nigeria, 17th – 19th October 2019

DRAFT NATIONAL REPORT TO REGIONAL HYDROGRAPHIC COMMISSIONS – THE GAMBIA

Executive summary:

The Gambia is a signatory to the SOLAS and UNCLOS conventions. It is also a member of the IMO, IALA and MOWCA. The Gambia Port Authority is a member of PMAWCA and maintains regular liaison with the UKHO which is its charting authority.

1. Hydrographic Office / Service:

Hydrographic functions are executed by the Gambia Ports Authority under Department of Harbours and Marine Services directorate. Capt. Kulay Manneh, Harbour Master and Dominic Correa, CAT A Hydrographic Surveyor are the appropriate contacts for navigational warnings, port information and hydrographic surveys. The contact details in the entry for The Gambia in the IHO year book are as follows and thus should be maintain.

- I. Capt. Kulay Manneh
Harbour Master
Gambia Port Authority
1st Liberation Avenue
P.O Box, 617
Banjul, The Gambia
Mobile: (220) 9977038
Office: (220) 4229940
Email: kmanneh@gambiaports.gm

- II. Dominic Correa
Hydrographic Survey Technician
Gambia Ports Authority
1st Liberation Avenue
P.O Box, 617
Banjul, The Gambia
Mobile: (220) 9962853
Office: (200) 4227266
Email: correadominic@yahoo.co.uk

2. Surveys:

Chart 608 is the product of the survey of the approach channel and Port of Banjul done by the Royal Navy in 1981. Chart 609 is the product of survey of the River Gambia above Banjul to Kaur done by the Royal Navy in the 1940s

Gambia Ports Authority has just financed a maintenance project that was executed by DEME. The dredged areas include all the berthing areas facilities, Banjul and Barra Ferry Landing Terminals, and part of the approach channel.

Pre-dredged and post-dredged hydrographic surveys were conducted by DEME and the local staff. A single beam system and RTK positioning were used for data acquisition. Qincy Software was used for data acquisition and processing.

The Authority has procured the following equipment from Sheargold.

Depth logger

Side Scan Sonar

Odom Digibar SVP

GPS antenna

Creation of depth reports/ bathymetry sheet with the software used was not accomplished during the training and installation. The Authority has made arrangements to purchase additional equipment. See section 7

3. New charts & updates:

Soundings data for the charts 608 and 609 are represented in fathoms and feet. The UKHO as the primary charting authority is in process of shifting them to WGS 84 datum.

4. New publications & updates:

Bathymetric sheets for the post-dredged survey of the maintenance dredging works at Banjul-Barra Landing sites and jetty areas project have been received by the Port Authority in DWG format and sent to the UKHO for promulgation and other updates. Nautical publications are delivered upon request through GPA procurement unit.

5. MSI

A new GMDSS radio station was installed at the Gambia Naval Headquarters in 2007. The name of this station is called Banjul Radio. It is controlled and operated by the Gambia Navy. Local warnings and navigational information including weather and tidal predictions are transmitted by the Banjul Port Radio. Daily weather reports are received by the port from the Department of Water resources via email.

6. S-55

Latest update (Tables)

7. Capacity Building:

Arrangements are been made to procure the following additional equipment to enable full execution of hydrographic surveying and generation of end products.

a. Single beam echosounders

(I) 1 ECHOTRAC CVM, comprising Dual Frequency shallow water Echo Sounder in "carryon" size environmental case, includes DC and AC power cables, Ethernet cable, Odom E-Chart (Windows compatible control & display software), and operation/installation manual on CD

(II) Computer System for Data Acquisition and Processing

(III) Teledyne Odom Singlebeam transducers

1 SMBB200-9

b. Trimble Rover positioning system

1 Trimble SPS855RTK rover receiver including Radio insite

L1/L2 antenna and cabling

External UHF antenna

Antenna cabling

c. Trimble Base positioning system

1 Trimble SPS855RTK Base receiver including Radio insite

L1/L2 antenna and cabling

External UHF antenna

Antenna cabling

2 tripods

d. 1 Data acquisition system, comprising:

Teledyne RESON Singlebeam Data acquisition license

1 x Teledyne RESON Software on USB

Once these equipment are delivered and the installed, the authority would require the service of an experienced surveyor to lead the local staff in conducting routine surveys and surveys for the purpose of charting for our port, channel, river and other water ways.

The Port Authority will also require technical support for capacity building for the following program.

- BSc hydrographic/Oceanography/Geomatic studies
- Cat "B" Nautical Cartography
- Onboard training

8. Oceanographic activities.

During the IHO technical visit to the Gambia July, 2017, the consultant recommended that the GPA develop a relationship with OIC and IALA for development and possible further training opportunities. The GPA is yet to identify possible channel to establish relationships with these international organizations.

Tide Gauge Network

The Department of Water Resources is the custodians of tidal structures and tidal information in the Gambia. There is a tide station installed at the Banjul harbour.

- tidal observations?
 - OTT Ecolog 800 Device and OTT Side Looking Doppler Device are available
 - There are also Gauge plates installed as back up for water level monitoring in all stations
 - Tidal observations / Water level measurements, Salinity, Specific conductivity, Total Dissolved Substances and Temperature are recorded by the OTT Ecolog 800 device while Discharge is recorded by the OTT SLD.

The GPA is yet to receive tidal data for onward transmission to the UKHO to perform harmonic analysis of the tidal data. This was among the recommendations put forward by the consultants during the IHO technical visit.

9. Other activities:

Stakeholders in the national hydrographic coordinating committee have been identified. Once equipment are delivered and survey commences, a national hydrographic coordinating committee will be instituted and technicians from these institutions may receive training.

10. Conclusions

Our priority remains the development of clear routine survey program for the definition and maintenance of Banjul Port, Banjul Fisheries Jetty, Approach Channel, Rivers and/or other water ways.

Training two technicians at Bsc level in Oceanography/Geomatics.

Category "B" Nautical Cartography and Onboard training for multilateral and regional development projects with hydrographic components.

UPDATE ON 2017 TV RECOMMENDATIONS

RECOMMENDATIONS

1 Actions, opportunities

- a. Ministry of Works, Infrastructures and Transport to establish a National Hydrographic Committee (NHC) including the following stakeholders: MWIT, Gambia Navy, GPA, GMA, NEA, Department of land of survey, Water resources, NDMA. Such NHC very well accepted by all stakeholders.

The line ministry, MWIT and stakeholders agreed to the formation of a National Hydrographic Coordinating Committee.

- b. NHC to deal with maritime geospatial information (hydrography, cartography, environment, Integrated Coastal Zone Management, security, disaster management ...)

Bathymetry, GPS Positioning, tides, shoreline data, Atons, Dtons and seafloor images will be processed and achieved. This information will be used to create end products that could be used in all the above mentioned disciplines.

- c. NHC to plan, investigate sources of funding and coordinate involvement of stakeholders.

The GPA has allocated a budget for the procurement of bathymetry equipment with its compactable GPS positioning. Recurrent budgets in collaboration with other stakeholders will follow upon receipt of the equipment, installation and start of surveys.

- d. MWIT to be chair and secretary.

This will take place upon receipt of equipment and commencement of surveys.

- e. NHC to create a national data center (NEA may be considered) and facilitate data sharing and distribution.

This will be done after commencement of surveys and generation of data and end products.

- f. GPA to propose to the NHC a strategic plan for hydrography.

The plan has been developed. It will be discussed with all stakeholders involved after commencement of surveys.

- g. To be in accordance with SOLAS, Gambia Government to sign a bilateral arrangement with UKHO to formalize production of navigational charts and publications within their water (draft arrangement presented to MWIT, GMA, GPA).

GPA has sent a letter to MWIT proposing her to proceed and endorse the agreement with the UKHO

- h. The Gambia to become an associated member of EAtHC and sign the status during the next meeting in Nigeria (Lagos) in October 2018.

Nigeria assumed as chair of the EAtHC in October 2018. This request was put to the chair Emeka E. Okafor. He responded that The Gambia exercised a little patience as the secretariat will advised her appropriately.

The GPA has recently received a request from the IHO suggesting that The Gambia become a member of the IHO. A letter has been sent to the MWIT to engage her in the process. MWIT tasked GPA to put all the inputs in a cabinet paper format for presentation to the cabinet. This has been done and the paper is under review.

- i. GPA/GMA to allocate regular funding and travel support to this hydrographic unit to fulfill the duties of the service and to represent The Gambia in appropriate forums, and in particular, to attend relevant meetings of the EAtHC and IHO.

GPA was represented in the last EAtHC conference in October of 2018 in Nigeria.

- j. Survey training by UKHO to be envisaged after using the new equipment currently on order.

This will be sought after receipt of equipment, installation and training

- k. Publicity to confirm GPA as the Maritime Safety Information (MSI) operational Coordinator.

GPA is the institution that sent out navigational warnings.

- l. GPA to liaise with NAVAREA II (France/Shom) and have regular contact (3 months) even if no information.

The last navigational warning to NAVAREA II and UKHO was on the missing BUOY, Dog Island Buoy. Though it is a local warning, the coordinator prefers to send the warning out to these centres

- m. GPA to apply to the SAIHC for a place on MSI course in September 2017 (South Africa).

GPA was represented in the SAIHC workshop in Sept 5-7, 2017

- n. GPA to develop relationship with IOC and IALA for development and possible further training opportunities.
IOC and IALA has GPA in their mailing list. GPA continues to receive updates from these international organizations. More recent in and IALA mission to the Gambia and the IALA-IHO capacity building workshop on hydrography and marine aids to navigation in Africa.
- o. GPA to have priority for equipment for survey in the harbor, the approaches and the river.
This is noted and will be highly considered upon receipt and installation of equipment and commencement of surveys.
- p. GPA to send to UKHO navigational information to update charts and nautical publication.
New depths of dredged areas of Banjul harbor and part of the channel were sent to the UKHO for promulgation.
- q. Tides data and metadata from DWR to be sent to GPA for qualification (vertical datum) and provide UKHO for harmonic analysis and new predictions on Admiralty products.

GPA received recordings of tidal data from DWR from the following stations.

Banjul Harbour

Basse

Tendaba

Bansang

Pakaliba

Kaur

Kuntaur

Ballingho.

These recording were in excel format and were forwarded to Cathy Tunks of the UKHO. She acknowledged receipt of the data and said she will forward it to UKHO tidal branch and will get back to GPA if the branch has any questions.

- r. DWR to sent data and meta data to GPA for survey corrections on request.
This will be done upon commencement of surveys
- s. GPA and DWR to cooperate for maintenance and calibration of the tide gauge station of Banjul harbor.
The two institution are cooperating well.
- t. Gambia Navy, GPA, DWR and NEA to have a joint project to survey the river both for bathymetry and hydrology. UKHO to produce a new chart based on this new survey and other data set available from the NHC.
This will be pursued upon receipt of equipment and installation

- u. Boats, GPS, echo sounders, computers ... of different organizations to be made available and shared as required.

The NHCC will have this mutual understanding

- v. Existing experts in GIS in The Gambia (could be : GBOS, NEA, Planning division of ministry of agriculture, University of the Gambia) to be utilized to benefit the project and provide training for less experienced staff.

These institutions will be contacted once survey products are generated.

- w. Pre and post dredge surveys be conducted independently from dredging consultants.

Noted

- x. Ensure that data (bathymetry) collected by oil and gas exploration is archived (at a national level) and communicated to update charts.

GPA and other stakeholders will reach out to the central government.

- y. United Kingdom can continue to issue nautical publications, charts and up-dates, on behalf of The Gambia. The provision of MSI and the capacity to conduct surveys according to local priorities will support the safety of navigation in The Gambia waters.

MWIT will formalize the agreement.