IHO Capacity Building Programme

The State of Hydrography and Nautical Charting in The United Republic of Tanzania

December 2012

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Contents

Abbreviations

ALB	Airborne Laser Bathymetry
AtoN	Aids to Navigation
BA	British Admiralty [Chart]
dwt	Dead Weight Tonnage
Ed	Edition
EEZ	Exclusive Economic Zone
ENC	Electronic Navigational Chart
FAD	Fish Aggregating Device
GLOSS	Global Sea Level Observing System
grt	Gross Registered Tonnage
ICZM	Integrated Coastal Zone Management
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
Lidar	Light Detection and Ranging
LOA	Length overall
MBES	Multi Beam Echo Sounder
MID	Ministry of Infrastructure Development
MoU	Memorandum of Understanding
MLHHSD	Ministry of Lands, Housing and Human Settlements Development
MSDI	Marine Spatial Data infrastructure
MSI	Maritime Safety Information
MSP	Maritime Spatial Planning
NCG	National Coast Guard
NE	New Edition (of a navigational chart)
NHC	National Hydrographic Committee
NIOHC	North Indian Ocean Hydrographic Commission
NM	Notice to Mariners
PCA	Primary Charting Authority
RHC	Regional Hydrographic Commission
RNC	Raster Navigational Chart
SAIHC	Southern Africa and the Islands Hydrographic Commission

SANHO	South African Navy Hydrographic Office
SBES	Single Beam Echo Sounder
SOLAS	[United Nations] Convention of the Safety of Life at Sea
TPA	Tanzania Ports Authority
ToR	Terms of Reference
TTW	Territorial Waters
UKHO	United Kingdom Hydrographic Office
UNCLOS	United Nations Convention on the Law of the Sea
ZPC	Zanzibar Ports Corporation

Executive Summary

The government of the United Republic of Tanzania is a State Party to the SOLAS Convention and appears well versed with the provisions in SOLAS Chapter V Regulations 9 and 4 to ensure that appropriate hydrographic and charting services are made available. The technical visit increased the awareness through the National Hydrographic Committee (NHC) of national hydrography, the state of hydrography and nautical charting in Tanzania and its potentially adverse impact on economic growth, safety of navigation and protection of the marine environment.

The NHC met for the first time in approximately three years as a vehicle for the IHO Technical Team to liaise with hydrographic stakeholders. It is understood that this long interval was due to the UNLCLOS 76 work underway, however, it is considered that because of this work the NHC should have convened more frequently. The NHC is a vital means of coordinating the national hydrographic effort and it should meet regularly as allowed and be funded accordingly.

Despite much discussion of maritime safety information and its dissemination the IHO Technical Team drew the conclusion that this vital component of national hydrography was not working efficiently. Understanding of MSI in its various forms appears to be lacking; in-country MSI training should be considered as a high priority. It is considered of the utmost importance to appointment and train a National Maritime Safety Information Coordinator to ensure that Tanzania discharges effectively its MSI responsibilities under SOLAS.

For historical reasons, the production of nautical charts and publications required under SOLAS for Tanzania is produced by the UKHO as the Primary Charting Authority (PCA). Notwithstanding in the majority of cases their modern appearance, almost all of the charts covering Tanzania are based on old and generally imprecise survey information; the exceptions are those covering Dar es Salaam Port and Zanzibar Port. Charting information is being passed by the Tanzania Ports Authority (TPA) to the United Kingdom Hydrographic Office (UKHO) as the PCA to maintain existing charts; however, it is uncertain whether other information is being passed to the PCA and this important data link should be strengthened. The IHO Technical Team further considers that formal bilateral arrangements with the PCA would benefit Tanzania.

Currently there is no national mechanism to determine priorities for surveys or charting. TPA will, with its re-equipping of the hydrographic section, be able to conduct much needed international standard surveys in its ports; however this still leaves the ports under the Zanzibar Ports Corporation and the wider national waters unattended. The NHC should address this issue and bring forward plans to government for funding critical surveys in national waters.

The improvement of charts covering Tanzania should be a matter of particular concern to the Government of Tanzania. Every effort should be made to work with the UKHO, which is the producer of the only comprehensive collection of nautical charts and publications covering Tanzania, with vital new and revised information to help improve these charts and keep them up to date.

The less than ideal state of nautical charting in Tanzania and the lack of a coherent MSI service to promulgate navigational and meteorological warnings, search and rescue information and other urgent safety-related information, including urgent information related to charts is potentially having an adverse impact on Tanzania economy as well as putting the safety of life at sea and protection of the marine environment at increased risk. This is because of the inherent risk of maritime incidents and the adverse effect on efficient and effective shipping operations.

Tanzania, as a State Party to the SOLAS Convention, is required to ensure that appropriate paper charts and ENCs and maritime safety information are available in accordance with Regulations 9 and 4 of Chapter V of that Convention. In this regard Tanzania, although making progress, is not meeting in full its treaty obligations. An improvement in the flow of MSI data to the NAVAREA Coordinator and the UKHO is a simple and vital first step in improving the country's SOLAS obligations. Through the enhancement of a national hydrographic capability the government of Tanzania is taking steps to address the urgent need for hydrographic data and this initiative should be encouraged. For the provision of charts and publications it is considered to be in Tanzania government's best interest to maintain and foster its links with UKHO for the provision of nautical charts and publications. By taking these steps Tanzania can demonstrate its commitment to and compliance with the delivery of hydrographic services as required by SOLAS.

Recommended Actions

The following recommended actions are provided for consideration by the relevant authorities:

The Government of Tanzania should:

a. Formally designate a National Hydrographic Authority to be responsible for coordination and ensuring the provision of appropriate nautical charting services for Tanzania in accordance with the requirements of the International Convention on the Safety of Life at Sea (SOLAS), and in accordance with the principles established by the IHO. See 5.4

b. Allocate regular funding and travel support for the National Hydrographic Authority to fulfil the duties of the Office and to represent Tanzania in appropriate forums, and in particular, to attend relevant meetings of the SAIHC and IHO. See 5.4

c. Formalize and strengthen relations with the primary charting authority through bilateral agreements with the Ministry of Lands, Housing & Human Settlement Development (MLHHSD) and / or TPA. See 5.3

d. Formalize the authority of the National Hydrographic Committee within the Tanzanian government structure. See 5.5

The **National Hydrographic Committee** should:

e. Should propose to the government of Tanzania to formalize the authority of the National Hydrographic Committee within the Tanzanian government structure. See 5.5

f. Raise awareness with senior members of government of national hydrography and its potential benefits to the economy of the country. See 4.1

g. Should propose to the government of Tanzania that the MLHHSD be formally constituted as the National Hydrographic Authority. See 4.3

h. As a matter of urgency improve MSI coordination in Tanzania seeking assistance from other national hydrographic offices if necessary. See 4.4

i. Develop a five year survey programme for Tanzania. See 5.2

j. Invite additional ministries and authorities to join the NHC. See 5.5

k. Maintain the momentum of national hydrography through regular meetings as allowed for in its Terms of Reference. See 5.5

l. To review its Terms of Reference in the light of recommendations in this report. See 5.5

m. Develop and monitor a coordinated training plan such that the IHO Cat B surveyors – from whichever department – can gain the necessary professional experience and that the NHC propose financial means whereby this training can be achieved. See 5.6

n. Develop a process whereby government hydrographic staff engage in whatever survey operations are taking place within the country – government and commercial – to ensure that their professional development is maintained. See 5.6

o. Review the charting of all marine parks and reserves areas and inform the primary charting authority of the limits of those uncharted. See Annex C paragraph 11.

p. Review all bathymetric data of Tanzania's waters and ensure that is sent to the primary charting authority at the earliest opportunity. See Annex D paragraph 1

The National Hydrographic Authority should:

q. Liaise with the Regional Team 3 at the UKHO to ensure that new navigationally significant information is forwarded and included in existing charts of Tanzania.

r. Conclude a MoU or a Cooperation Arrangement with the Primary Charting Authority (UKHO).

SUMATRA should:

s. Formally establish the post of the National MSI Coordinator. See 5.1

t. Establish a good working relationship between the NAVAREA VIII coordinator in India and the national MSI coordinator. See 5.1

The **Tanzania Port Authority** should:

u. Post the commissioning of MBES, and possibly later by MLHHSD, request that national hydrographic offices with staff experienced in MBES methods are invited to Tanzania to review survey practices.

v. Conclude a MoU or a Cooperation Arrangement with the Primary Charting Authority (UKHO).

REPORT

1. Introduction

The International Hydrographic Organization (IHO) is an intergovernmental technical organization, currently comprising 81 Member States. The IHO seeks to ensure that all States with coastlines and maritime interests provide adequate and timely hydrographic data, products and services, thereby advancing maritime safety and efficiency in support of the protection and sustainable use of the marine environment. The IHO is the recognised competent authority of the United Nations for hydrography and nautical charting. The International Hydrographic Bureau (IHB), based in Monaco, is the secretariat of the IHO. The United Republic of Tanzania is not currently a member of IHO.

The IHO has encouraged the establishment of Regional Hydrographic Commissions (RHCs) to coordinate hydrographic activity and cooperation at the regional level. The RHCs are made up predominantly of IHO Member States; however, other regional States also participate as Associate Members. RHCs are not formal bodies of the IHO, but work in close harmony with the Organization to help further its ideals and program. RHCs meet at regular intervals to discuss such things as mutual hydrographic and chart production problems, plan joint survey operations, and resolve schemes for medium and large scale International Chart coverage in their regions Non-Member States may participate as RHC Associate members; Tanzania currently has Associate Member status in the Southern Africa and Islands Hydrographic Commission (SAIHC).

As a result of a national request to the SAIHC this report has been written with the express intention of assisting the Tanzania government to strengthen and develop its hydrographic effort to meet its current and future needs and in turn, to meet its international maritime obligations under the UN Convention on the Safety of Life at Sea (SOLAS). The report comprises a description of the visit, major conclusions and a number of recommended actions for consideration by the relevant organizations.

The report is supported by various Annexes and Appendices providing detailed information including the dependence on hydrography and nautical charting of various sectors in Tanzania, an analysis of the current survey state, an analysis of the existing charting situation and surveys, and recommendations for the strengthening of national hydrography in the United Republic of Tanzania

2. IHO Technical Visit

A proposal for a technical and advisory visit to Tanzania to help assess the current status of charting and hydrography in the country and to provide advice to the government and to stakeholders on a way ahead was raised at a meeting of the SAIHC . As a result the Capacity Building Sub Committee approved and funded a visit to Tanzania to assess the current status of hydrography and to raise awareness in the country of the importance of hydrography and nautical charting.

Captain Abri Kampfer from the South African Navy Hydrographic Office (SANHO) and current Chair of SAIHC and Mr Bob Wilson, seconded from the United Kingdom Hydrographic Office (UKHO) carried out a hydrographic awareness and technical assessment visit to the Tanzania between 3 - 6 December 2012. Captain Kampfer left pm 5 December to conduct a further IHO Technical visit to Kenya whilst Mr Wilson returned to England am 7 December following further meetings with stakeholders in Tanzania. Mr Justo Lyamuya, Assistant Director Hydrographic Surveys at the Ministry of Lands, Housing & Human Settlement Development co-ordinated the visit.

The IHO Team first called on the Director, Surveys and Mapping Division, Dr Selassie D. Mayunga, The main meetings were held at the Harbour View Suites where the members of the National Hydrographic Committee had assembled.

The meetings enabled the IHO Technical Team to build up a picture of the salient features of the maritime sphere both on the Indian Ocean coast and to a limited extent on the Great Lakes. The meetings also facilitated the appreciation of data available and data sharing amongst the national representatives.

This resulting report has been written with the express intention of assisting the government of Tanzania to arrange and strengthen its hydrographic effort to meet its current and future needs and in turn, to meet its international maritime obligations under the UN Convention on the Safety of Life at Sea (SOLAS). The report comprises a description of the visit, a detailed analysis of the needs and current status of charting, major conclusions and a number of recommended actions for consideration by the relevant authorities

The details of those attending the various meetings are shown at Annex A - List of Contacts.

3. Audit of Previous Technical Visits

The United Republic of Tanzania has received two previous IHO Technical Visits in 2006 and 2007, and a West Indian Ocean Marine Highway (WIOMH) Technical Visit in 2010; reports from these visits may be viewed on the IHO website at http://www.iho.int/mtg_docs/CB/CBA_TechnicalVisits.htm [accessed 21 November 2012]. The reports generated from these visits have been consulted in the preparation of this report.

Recommendations that have been made following previous technical visits to Tanzania are summarized under the key headings below with an assessment of progress made with each item.

- **National Hydrographic Committee**. Tanzania formed a NHC in 2009. Due to work on the UNCLOS 76 presentation the NHC did not meet for three years until the IHO Technical Visit in 2012. Clearly this body has not been used in the way it was promoted by the IHO and, it is considered, should have met during the UNCLOS 76 programme of work to influence national hydrography and not avoid it.
- **National Hydrographic Strategy**. Tanzania has yet to develop a national hydrographic strategy. It is recommended that this should be a main agenda item for the NHC requesting assistance from other national hydrographic offices within SAIHC if necessary.
- **Regional Hydrographic Commission Membership**. Tanzania is now an associate member of SAIHC and participates in the meetings.
- **Maritime Safety Information**. Tanzania has been encouraged to develop an effective maritime safety information system but despite the formation of SUMATRA the information flow is ineffective. The authorities are in general confused regarding maritime safety information issues.
- **National Hydrographic Capability**. There has been no improvement in the national hydrographic capability in either equipment or personnel; however, through the TPA there has been a significant upgrade with the advent of MBES for port survey operations. National authorities were encouraged to develop hydrographic data gathering programme via outsourcing; this has not been considered possibly due to the lack of NHC activity. Similarly the development of WGS84 geo-referenced coastline at 1:100,000 scale from LandSat imagery in cooperation with UKHO has not been progressed.

A more detailed assessment of the current situation and progress against recommendations is at Annex B.

4. Tanzania Hydrographic Assessment

The following is a general assessment of the situation in Tanzania regarding hydrography and nautical charting services. Tanzania has a long coastline on the Indian Ocean and inland water bodies (Lake Victoria, Tanganyika and Nyasa) where the country has an obligation under international law to ensure the safety of navigation and protection of the marine environment. A discussion of available options, several conclusions and recommended actions, supported by a number of Annexes then follows.

4.1 National Hydrographic Awareness

In general there is awareness in Tanzania of treaty obligations under SOLAS and the provisions under Chapter V Regulations 4 and 9 to ensure that appropriate hydrographic and charting services are made available: Tanzania is a State Party to this Convention. Awareness has been heightened at the working level by the meeting of the NHC and the visit of the IHO Technical Team. This awareness is not necessarily shared by senior members of the ministries and particularly those unconnected with SOLAS.

The Government of Tanzania, through its various agencies, is aware of the current state of hydrography and nautical charting in Tanzania and the benefits of modern hydrography to economic growth, safety of navigation

and protection of the marine environment. However, in recent years few systematic surveys of Tanzanian waters have been conducted. It is recommended that through the national Hydrographic Committee senior members of government are made aware of national hydrography and its potential benefits to the economy of the country possibly using the UN endorsed annual World Hydrography Day on 21 June.

4.2 National Hydrographic Structure

Four agencies within Tanzania have responsibility for or participate in hydrographic matters: the Surface and Marine Transport Regulatory Authority (SUMATRA) under the Ministry of Transport, the Ministry of Lands, Housing and Human Settlements Development (MLHHSD), the Tanzania Ports Authority (TPA) and the Zanzibar Ports Corporation (ZPC).

The Ministry of Transport has responsibility for Maritime Affairs and implementation of all Maritime Conventions ratified by the United Republic of Tanzania. Those specific to hydrography are the United Nations' Conventions on the Law of the Sea (UNCLOS) and the Safety of Life at Sea (SOLAS). Matters related to maritime safety and security and protection of the marine environment are managed in accordance with the provisions of the Merchant Shipping Act, 2003. Under the provisions of this Act, the Ministry of Transport has delegated the obligation to ensure the implementation of the Act and the ratified International Maritime Organization (IMO) Conventions to the Surface and Marine Transport Regulatory Authority (SUMATRA). SUMATRA is a regulatory body and has no hydrographic capability.

National hydrographic matters are the responsibility of MLHHSD specifically with the Hydrographic Surveys Section within the Surveys and Mapping Division headed by Assistant Director for Hydrographic Surveys. The Ministry is responsible for land and hydrographic surveys and mapping/charting in the country. The ministry has three staff with IHO Category B hydrographic surveyor qualification but no nautical cartographers or hydrographic equipment. The Ministry, through the Hydrographic Surveys Section provides the NHC secretariat.

The Ministry of Infrastructure Development, through Tanzania Ports Authority (TPA) has the responsibility to manage all Tanzania mainland Sea Ports and Lake Ports. TPA is tasked to promote the effective management and operations of sea and inland water ways ports, secure the provision of services in relation to loading and unloading of cargo, develop and manage the port infrastructure and maintain ports safety and security. TPA has a Hydrographic Section to undertake the following:

- Hydrographic surveys in seaports and inland water ways ports on Lakes Victoria, Tanganyika and Nyasa.
- Maintenance and improvement of Marine Navigational Aids in seaports, coast and inland water ways ports.
- Dredging to maintain depths at channels and berths in seaports and inland water ways ports.
- Notices to Mariners
- Oceanographic studies

Zanzibar Ports Corporation (ZPC) is the authority responsible for Ports in Zanzibar and Pemba; it does not have a hydrographic capability.

Tanzania's overarching body coordinating the national hydrographic effort is the National Hydrographic Committee, see 5.5 National Hydrographic Committee.

4.3 National Hydrographic Authority

The IHO recommends that every coastal State should designate a National Hydrographic Authority responsible for coordinating hydrography and charting in the country. The role of the National Hydrographic Authority is to be the principal national and international point of contact and to act on behalf of the government to ensure that the State meets its international obligations that proper MSI and nautical charting services are available to mariners. The National Hydrography Authority is the first point of contact for in-country stakeholders and for maintaining relations with relevant international organisations. In the case of the United Republic of Tanzania, these contacts would include the IHO, SAIHC, the PCA (UKHO) and other countries and agencies that might support hydrographic development and assistance in Tanzania.

In Tanzania it is recommended that the MLHHSD is the most appropriate body to be the National Hydrographic Authority having legally delegated powers. Such an arrangement is similar to that adopted in many other maritime states, whereby the National Maritime Safety Administration/Authority (SUMATRA in Tanzania) does not have a

hydrographic capability and delegates this responsibility for the development and coordination of the provision of hydrographic surveying and nautical charting services to another national authority.

4.4 Maritime Safety Information

The Surface and Marine Transport Regulatory Authority (SUMATRA) is the primary maritime safety information authority in Tanzania and is responsible for issuing navigational warnings; SUMATRA also coordinates national Search and Rescue (SAR) and pollution mitigation matters. Tanzania has both a draft National SAR Plan and a draft National Marine Oil Spill Response Contingency Plan. SUMATRA's management of SAR services and oil pollution issues is coordinated through the Dar es Salaam Maritime and Rescue Coordination Centre (MRCC). The MRCC lacks a NAVTEX broadcast facility.

It was clear to the IHO Technical Team that there was general lack of understanding and lack of coordination of MSI affairs. The Technical Team stated that it was unfortunate that Tanzania lost a valuable MSI training opportunity by not attending the Phase 1 Chart Awareness course in South Africa although allocated a place. The imperfect understanding of MSI and lack of coordination is a serious omission in Tanzania's compliance with SOLAS and it is recommended that this is attended to as a matter of urgency seeking assistance from other national hydrographic offices if necessary. The NHC was also urged to ensure that the most suitable candidate is nominated for the next available MSI Course.

Of the 20 charts of Tanzania published by the Primary Charting Authority (PCA) - the United Kingdom Hydrographic Office (UKHO) - seven are fathoms and feet charts not referred to WGS84 whilst the remainder are all metric charts referred to WGS84 and published since 1997, three in the last year. Whilst the charts of Dar es Salaam and Zanzibar have been subject to regular notice to mariners (NtoM) action the others have not.

Currently there is liaison between the TPA and the UKHO's chart compilers and maintainers in Regional Team 3, the section responsible for producing and maintaining the existing charts of Tanzania. The routine maintenance and updating of charts and publications, to include changes in buoyage and wrecks for example, is as important as new survey data if charts are to be maintained to the standard required for safe navigation. The TPA/UKHO liaison is the only liaison between Tanzania and the PCA.

The following table shows the publication date of charts covering Tanzania, the reference of the last notice to mariners (NtoM), and the total number of NtoMs affecting the chart since publication; table correct to 21 November 2012.

BA Chart	Title	Published (Last NtoM/Year)	NtoMs issued since Publication
661	Approaches to Kilwa Kisiwani Harbour	Ed 2 17 Dec 2009 NM4596/12	1
663	Approaches to Tanga	28 Aug 1997 NM3455/10	5
665	Approaches to Zanzibar	Ed 2 13 Sep 2012 -	0
674	Approaches to Dar es Salaam	Ed 3 21 Dec 2000 NM4540/12	8
681	Lindi Bay	Ed 2 10 Dec 2009 -	0
684	Mtwara and Mikindani Harbours	NE 6 Jan 1950 NM1448/11	6
687	Kiswere Harbour	LC Jan 1903 NM3704/06	4
690	Cabo Delgado to Mikindani Bay	LC 18 Nov 1960 NM3704/06	7
691	Mtwara Harbour	31 May 1948 NM1448/11	6 +
693	Dar es Salaam	Ed 5 11 Oct 2012 -	0

BA Chart	Title	Published (Last NtoM/Year)	NtoMs issued since Publication
865	Plans on the Tanganyika Coast	12 Dec 1930 3704/06	9
866	Plans in the Tanganyika and Kenya	NE 24 Nov 1950 NM5353/07	25
1032	North Mafia Channel to Kilwa Point	Ed 2 22 Jan 2004 NM4112/12	4
1310	South West Coast of Pemba Island	NE 14 Nov 1958 NM3455/10	7
2927	Pemba to Mtwara	Ed 2 5 Jul 2012 -	0
2929	Mtwara to Mafia island	Ed 1 9 Oct 2003 NM4596/12	10
2949	Mtwara to Lamu	21 Jul 2005 NM4596/12	2
3211	Zanzibar Harbour	Ed 3 13 Sep 2012 NM1707/12	0
3310	Mafia Island to Pemba Island	28 Aug 1997 NM4540/12	17
3361	Pemba Island to Lamu	Ed 2 22 Aug 2002 NM3455/10	7

4.5 Hydrographic Surveying[1]

Hydrographic surveying activities in Tanzania come under two separate Ministries; the Ministry of Transport for SUMATRA and TPA and the Ministry of Lands, Housing and Human Settlements Development (MLHHSD).

The Ministry of Transport is responsible for the handling of all maritime affairs and implementation of all maritime conventions ratified by the United Republic of Tanzania. Ratified conventions include UNCLOS, SOLAS, the International Convention for the Prevention of Pollution from Ships (MARPOL), Load Line, the Standards of Training, Certification & Watchkeeping (STCW), Tonnage, the International Regulations for Preventing Collisions at Sea (COLREGs) and SAR among others. Matters related to maritime safety and security and protection of the marine environment are managed in accordance with the provisions of the Merchant Shipping Act, 2003. Under the provisions of this Act, the Ministry of Transport has delegated the obligation to ensure the implementation of the Act and the ratified International Maritime Organization (IMO) Conventions to the Surface and Marine Transport Regulatory Authority (SUMATRA).

The Ministry of Lands, Housing and Human Settlements development includes a Hydrographic Survey Section within the Surveys and Mapping Division and the section is headed by the Assistant Director for Hydrographic Surveys. The Ministry is responsible for land and hydrographic surveys and mapping/charting of the country. At present there are no hydrographic survey vessels or equipment although there are three IHO Cat B qualified staff. The Ministry provides secretariat support for the National Hydrographic Committee.

The Tanzania Ports Authority (TPA) has the responsibility to manage all Tanzania main sea and lake ports. TPA's broad functions are to promote the effective management and operations of sea and inland water ways ports, secure the provision of services in relation to loading and unloading of cargo, develop and manage the port infrastructure and maintain ports safety and security. TPA has a Hydrographic Section staffed by one IHO Cat A and two IHO Cat B hydrographic surveyors and ten support staff. The TPA Hydrographic Section's principal functions are:

[1] Tanzania National Report to the 9th SAIHC meeting, 2012

- Hydrographic surveys in seaports and inland water ways ports on Lakes Victoria, Tanganyika and Nyasa;
- Maintenance and improvement of Marine Navigational Aids in seaports, coast and inland water ways ports;
- Dredging to maintain depths at channels and berths in seaports and inland water ways ports;
- Notices to mariners and Oceanographic studies;
- Zanzibar Ports Corporation (ZPC) is the authority responsible for Ports in Zanzibar and Pemba.

4.6 Nautical Charting

Tanzania has no national capability for nautical chart or publication production which is carried out by the United Kingdom Hydrographic Office (UKHO) as the Primary Charting Authority (PCA). UKHO charting of Tanzania and its outlying islands is of variable quality relying, with notable exceptions in the main ports of Dar es Salaam and Zanzibar, on data between 90 and 130 years old. A full review of charting by the PCA is at Annex E – Charting Analysis of Tanzanian Waters.

4.7 Hydrographic Resources

The government of Tanzania has a variety of hydrographic resources which are discussed below.

a. Hydrographic Survey Section, Surveys and Mapping Division, MHHSD

   This department has three trained hydrographers at IHO Cat B level. Although the department lacks any hydrographic equipment at present it is understood that it may be equipped with a MBES system in 2013.

b. Tanzania Ports Authority

   TPA has three trained hydrographers at IHO Cat B level and one at IHO Cat A. It is equipped with hydrographic equipment as listed below:

   - Two Hydrostar 4300 Hydrographic Echo sounders
   - DSM 12/212 & TRMTALK 450s Trimble, Differential Global Satellite positioning system (DGPS).
   - Hewlett Packard Hydrographic survey computer with HYDROpro and Navigation software.
   - A3 MP 5000 series plotter.
   - A0 Hp 800 plotter
   - A new RESON Seabat 7125 Multibeam Echo Sounder has been acquired together with QINSY & Qloud Software. This will be fitted on completion of the refitting and upgrading of the survey launch which is in progress.

c. University of Lands and Architectural Studies (Department of Land Surveying).

   The Department has one IHO Cat A hydrographer and is equipped with two SBESs.

d. Tide gauge Network.

   Permanent recording tide gauges are installed at Dar es Salaam Port, Mtwara Port and at Zanzibar Port. The Mtwara and Zanzibar tide gauges are connected by satellite link to the University of Hawaii.

e. United Kingdom Hydrographic Office (UKHO)

   UKHO as the Primary Charting Authority publishes, maintains and distributes nautical charts of Tanzania (paper and ENC) and supporting publications.

5. A Way Ahead

5.1 Maritime Safety Information

Maritime Safety Information (MSI) is considered by the IHO as the first phase in hydrographic capacity building and whilst the IHO Technical Team could see that progress has been made in this area it has concerns that the national MSI system is not functioning efficiently.

The IHO recommends that every coastal State should designate a national MSI coordinator. As SUMATRA is the lead authority for MSI in Tanzania it is recommended that the national MSI coordinator should be part of this organization. It is also recommended that a deck officer, naval officer or pilot with seagoing experience be nominated for this role. In addition it is essential that the national MSI coordinator has a deputy to gain the necessary experience to act as the national MSI coordinator during the post holder's absence and to assume the post in due course. Both officers will require the necessary training which is frequently provided under IHO CB training schemes.

However, as all hydrographic and maritime stakeholders have an interest in and input to MSI such training as is given should be extended to this group such that there is an awareness of what is MSI, how it is disseminated and what their role is in this process. To assist in this the IHO Technical Team passed a copy of the UKHO's International Code of Practice for MSI as a means of advising stakeholders of the types of MSI and how this is assessed and disseminated.

The IHO Technical Team strongly recommends that a good working relationship should be established between the NAVAREA VIII coordinator in India and the national MSI coordinator. This relationship should include regular contact even to the extent of saying that, if necessary, there has been no MSI data sent to the NAVAREA VIII coordinator as nothing has happened in the previous period of, for example, one month. In this way the NAVAREA VIII coordinator knows that the link is being maintained and is aware of the situation in Tanzania.

NAVAREA VIII Coordinator contact details:

Coordinator:	Joint Director of Hydrography, Maritime Safety Information Service
Postal Address:	National Hydrographic Office, 107-A, Rajpur Road, Dehradun-248001, India
Email:	msis-inho-navy@nic.in
Web Site:	http://www.hydrobharat.nic.in/inline_service.htm
Telephone:	+91-135-2747360-65
Fax:	+91-135-2748373

5.2 National Hydrographic Surveying

The United Republic of Tanzania has an extensive hydrographic surveying requirement with a growing capability to service it. The most immediate hydrographic survey requirement is in the many ports and harbours on the mainland and on the offshore islands. Surveys here date from between the late nineteenth and mid twentieth centuries and are wholly inadequate for modern use.

TPA has plans post the commissioning of its MBES system to conduct surveys in its various ports and their approaches. To assist in this the IHO Technical Team has provided at Annex E Review of Current Charting an indication of where these surveys are required and TPA has a clear understanding of how this should be prioritized. The IHO Technical Team recommends that the NHC along with TPA and ZPC develops a five year survey programme for Tanzania.

5.3 Bilateral Arrangements for Surveying and Charting

Bilateral agreements with established hydrographic offices and in particular the primary charting authority (PCA) are a valuable means of fulfilling SOLAS obligations for countries with a limited and or developing hydrographic capability. Tanzania's PCA is the United Kingdom Hydrographic Office with which it has cordial relations. It is recommended that to formalize and strengthen this relationship to the mutual benefit of all parties that previously presented draft bilateral agreements by UKHO to both the MLHHSD and TPA are considered by Tanzania and revised if required. The need to have a local supplier of navigational charts of the waters of Tanzania should also be addressed.

5.4 National Hydrographic Authority

In Tanzania the Ministry of Transport is the SOLAS responsible ministry with the MHHSD having the responsibility for hydrographic surveying and nautical charting outside of the Tanzanian port limits and the TPA within the port limits. It was not clear to the IHO Technical Team if any specific ministry or department had the legal responsibility for hydrography as the National Hydrographic Authority and it is recommended that, if such provision has not been made, this should be rectified.

To ensure the effective operation of this authority to discharge its national duties regular funding should be allocated to represent Tanzania in appropriate forums, and in particular, to attend relevant meetings of the SAIHC and IHO;

5.5 National Hydrographic Committee

It was apparent to the IHO Technical Team that the lack of effective coordination of hydrographic activity in Tanzania is having a potential detrimental impact on the efficient operation and management of Tanzanian water space.

To coordinate hydrographic effort for the effective discharge of SOLAS responsibilities and the efficient management of a State's water space the IHO recommends the establishment of a National Hydrographic Committee to provide input to and coordination of the hydrographic programme and setting national charting and surveying priorities. In this way, the stakeholders are in a position to assist in the continuing maintenance of the charts, longer term planning and perhaps also to the programme budget. Tanzania has an established National Hydrographic Committee (NHC); however, the two day meeting of the NHC to which the IHO Technical Team was invited was the first such meeting to be held in the last three years.

It is recommended that the authority of the NHC should be strengthened by the foundation of the NHC within the Tanzanian government structure. To assist in this the specimen agreement produced by IHO (http://www.iho.int/mtg_docs/CB/CBA/Model_Decree_creation_Committee.pdf) was passed to the NHC during the IHO technical visit.

The NHC as constituted is comprised of representatives from the organizations listed below. It is recommended that the Ministry of Foreign Affairs, with interests in IHO membership, maritime boundary delimitation and foreign research cruises in Tanzanian waters, be invited to participate as a full member of the NHC. Similarly as the TPA is represented so, it is considered, should the Zanzibar Ports Corporation. Marine tourism is important to Tanzania and it is considered that the Ministry of Tourism should be represented.

- Ministry of Lands, Housing and Human Settlement Development - Secretariat
- Ministry of Transport
- Ministry of Communications and Transport Zanzibar
- SUMATRA
- Ministry of Defence (Navy)
- Ministry of Home Affairs – Marine Police
- Ministry of Natural Resources – Fisheries Department and Mbegani Fisheries Development Centre
- Vice-President's Office - Environment
- University of Dar es Salaam – Institute of marine Sciences Zanzibar - Chair
- University of Lands and Architectural Studies – Department of Land Surveying
- Commission of Lands and Environment Zanzibar
- Tanzania Ports Authority
- Tanzania Railways Corporation
- Tanzania Petroleum Development Corporation

It is for consideration that the following agencies be invited to join the NHC:

- The Marine Parks and Reserves Authority
- Ministry of Foreign Affairs
- Ministry of Tourism
- Zanzibar Ports Corporation

All hydrographic stakeholders need to be involved in contributing to Tanzania national hydrographic programme. This is not only to identify and prioritise national requirements, but also to contribute to the execution of the programme. This could be through help in-kind, such as the provision of boats, or personnel or through contributions to enlist contract support – for example for surveys of areas targeted for development. A key role for the stakeholders is to educate and encourage everyone to forward all relevant new or changed hydrographic information to the national coordinator for hydrography and charting.

The need for coordination of the national hydrographic effort was clearly demonstrated to the IHO Technical Team at the NHC meeting. It is recommended that the regular meetings of the NHC are held as allowed for in its terms of reference to make best use of Tanzania's valuable hydrographic assets.

5.6 National Hydrographic Capability Development

National hydrographic capability development is often considered to be external authorities assisting national authorities, however, this need not be the case and certainly this is not the case in Tanzania. It can be seen from the national hydrographic resources discussed in 5.5 Hydrographic Resources that there are significant and growing hydrographic resources, both human and material, within the United Republic of Tanzania. Unfortunately at present these are not being used to the nation's best advantage.

Training personnel to international standards is of little use if practical experience is not gained post training. Similarly the most modern equipment will not be used to best effect if trained operators do not maintain that training and gain experience through regular use of the equipment. Nor will the nation benefit when this equipment stands idle.

Tanzania has significant national hydrographic resources but lacks a coordinated approach to developing its staff and gaining the best from the equipment available. It is strongly recommended that the NHC review this situation and propose first a coordinated training plan such that the IHO Cat B surveyors – from whichever department – can gain the necessary professional experience and secondly that the NHC propose financial means whereby this training can be achieved. In addition it is recommended that, at least in the short term, all trained hydrographic staff are considered as a national resource pool and engage in whatever survey operations are taking place within the country – government and commercial – to ensure that their professional development is maintained.

Despite the remarks in the first paragraph of this section, the advent of MBES technology brings with it a whole new set of issues for the hydrographer to consider and in which to gain experience. It is recommended that post the use of MBES by TPA, and possibly later by MLHHSD, that national hydrographic offices with staff experienced in MBES methods be invited to Tanzania to review survey practices.

There are limited opportunities for internationally recognised hydrographic training. A list of courses is contained in IHO publication C-47 - *Training Courses in Hydrography and Nautical Cartography, 6th Edition*. This can be downloaded from the IHO website. Short courses in the fundamentals of hydrographic data gathering are available through the IHO Capacity Building Programme and should be bid for through SAIHC.

6. Technical Visit Conclusions

Based on discussions and the facts obtained, the following principal conclusions have been reached:

(1) There is generally good awareness of national hydrography in Tanzania and a desire to improve it.

(2) The NHC is potentially the most effective means of improving awareness of national hydrography within government.

(3) The current lack of coherent MSI services could be having an adverse impact on Tanzania economy as well as putting the safety of life at sea and protection of the marine environment at increased risk.

(4) The charts covering Tanzania could be improved with data held in Tanzania but not released to the Primary Charting Authority (UKHO).

(5) Tanzania's hydrographic resources have been greatly increased over the past year in terms of both equipment and trained personnel.

(6) Without a carefully considered programme of cooperation the nation's hydrographic resources will not be effectively realised.

7. Recommended Actions

The following recommended actions are provided for consideration by the relevant authorities:

The Government of Tanzania should:

a. Formally designate a National Hydrographic Authority to be responsible for coordination and ensuring the provision of appropriate nautical charting services for Tanzania in accordance with the requirements of the International Convention on the Safety of Life at Sea (SOLAS), and in accordance with the principles established by the IHO. See 5.4

b. Allocate regular funding and travel support for the National Hydrographic Authority to fulfil the duties of the Office and to represent Tanzania in appropriate forums, and in particular, to attend relevant meetings of the SAIHC and IHO. See 5.4

c. Formalize and strengthen relations with the primary charting authority through bilateral agreements with the Ministry of Lands, Housing and Human Settlements Development (MLHHSD) and / or TPA. See 5.3

d. Formalize the authority of the National Hydrographic Committee within the Tanzanian government structure. See 5.5

The **National Hydrographic Committee** should:

e. Should propose to the government of Tanzania to formalize the authority of the National Hydrographic Committee within the Tanzanian government structure. See 5.5

f. Raise awareness with senior members of government of national hydrography and its potential benefits to the economy of the country. See 4.1

g. Should propose to the government of Tanzania that the MLHHSD be formally constituted as the National Hydrographic Authority. See 4.3

h. As a matter of urgency improve MSI coordination in Tanzania seeking assistance from other national hydrographic offices if necessary. See 4.4

i. Develop a five year survey programme for Tanzania. See 5.2

j. Invite additional ministries and authorities to join the NHC. See 5.5

k. Maintain the momentum of national hydrography through regular meetings as allowed for in its Terms of Reference. See 5.5

l. To review its Terms of Reference in the light of recommendations in this report. See 5.5

m. Develop and monitor a coordinated training plan such that the IHO Cat B surveyors – from whichever department – can gain the necessary professional experience and that the NHC propose financial means whereby this training can be achieved. See 5.6

n. Develop a process whereby government hydrographic staff engages in whatever survey operations are taking place within the country – government and commercial – to ensure that their professional development is maintained. See 5.6

o. Review the charting of all marine parks and reserves areas and inform the primary charting authority of the limits of those uncharted. See Annex C paragraph 11.

p. Review all bathymetric data of Tanzania's waters and ensure that is sent to the primary charting authority at the earliest opportunity. See Annex D paragraph 1

The National Hydrographic Authority should:

q. Liaise with the Regional Team 3 at the UKHO to ensure that new navigationally significant information is forwarded and included in existing charts of Tanzania.

r. Conclude a MoU or a Cooperation Arrangement with the Primary Charting Authority (UKHO).

SUMATRA should:

s. Formally establish the post of the National MSI Coordinator. See 5.1

t. Establish a good working relationship between the NAVAREA VIII coordinator in India and the national MSI coordinator. See 5.1

The **Tanzania Port Authority** should:

u. Post the commissioning of MBES, and possibly later by MLHHSD, request that national hydrographic offices with staff experienced in MBES methods are invited to Tanzania to review survey practices.

v. Conclude a MoU or a Cooperation Arrangement with the Primary Charting Authority (UKHO).

Annex A – List of Contacts

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Annex B – Audit of Previous Technical Visits

This annex shows the recommended actions arising from the various technical visits to Tanzania since 2006. Under each action, *in italics*, is the current state of progress on each individual action. A summary of recommendations and follow up actions is at 4. Audit of Previous Technical Visits.

1. SAIHC Technical Visit 2006

1. Encouragement of Formation of a NHC, Development of a National Hydrographic Strategy, and RHC Membership. The Chairman was urged to implement annual meetings of the NHC. SAIHC support was pledged.

ACTION: NHC Chairman; Director Hydrographic Surveys.

National Hydrographic Committee (NHC). *Tanzania formed a NHC in 2009. Due to work on the UNCLOS 76 presentation the NHC did not meet for three years until the IHO Technical Visit in 2012. It is recommended that the NHC:*

a. Review its status as a constituted government committee and if necessary seek ways of strengthening its position within government;

b. Review its Terms of Reference (ToRs) due to the changes in ministries and their responsibilities;

c. Meet at the interval of one meeting every four months as set down in the NHC's ToRs or determine a more manageable meeting frequency based on requirement.

National Hydrographic Strategy*. Tanzania has yet to develop a national hydrographic strategy. It is recommended that this should be a main agenda item for the NHC requesting assistance from other national hydrographic offices within SAIHC if necessary.*

Regional Hydrographic Commission (RHC) Membership*. Completed, Tanzania is now an associate member of SAIHC and participates in the meetings.*

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

a. The NHC should give urgent consideration to the identification of the focal point mandated to collect and promulgate urgent navigational safety information. It would be beneficial if this could be done in time for the designated post holder to attend the Technical Workshop in Maputo on 5 June.

ACTION: NHC.

Completed, SUMATRA is the nominated MSI authority for coordinating and promulgating urgent navigational safety information.

b. The NHC should identify the optimum means of promulgation of urgent navigational and safety information, including assessment of the benefit of using any regional GMDSS arrangements which are developed for MSI.

ACTION: NHC; Director Hydrographic Surveys; TPA.

It is unclear if this has been done and it is recommended that the NHC review how MSI data is transmitted or published.

c. The Visit Team will liaise with the NAVAREA – Co-ordinator to facilitate communication with East African states.

ACTION: Chairman SAIHC and Vice Chairman IHOCBC.

There is almost no communication with the NAVAREA Coordinator other than through TPA. This issue should also be addressed when the role of the national MSI Coordinator is formalised.

3. Encouragement of Development of Hydrographic Capability. Tanzania should consider seeking SAIHC support with the following:

a. Identification of opportunities for field and office experience with IHO Member States.

ACTION: Director Hydrographic Surveys; TPA; Chairman SAIHC.

Participated in survey-on-the-job experience with SHOM whilst survey of WIOMH was conducted.

b. Preparation of bids to the IHO CBC, particularly for funding of training.

ACTION: Director Hydrographic Surveys; TPA; NHC members; Chairman SAIHC.

Participated in some SAIHC Capacity Building events and report on capacity building needs at SAIHC Conferences

2. IHO Technical Visit Report 2007

Recommended Future Strategy

9. As a matter of urgency, IHOCBC and SAIHC should advise and assist in the acquisition of a side scan sonar capability for use in conjunction with the current SBES system during port survey operations; it is recommended any additional capability expansion should be via equipment hire not outright purchase. The TPA has the capability and should continue to undertake all port surveys.

TPA has now acquired a MBES system with which it plans to resurvey all of Tanzania's mainland ports and harbours.

10. Tanzania, via the IHOCBC and SAIHC, should be cautioned against the purchase of expensive new equipment which may not be the most suitable for their needs, requires extensive training, significant processing and logistics effort. IHOCBC and SAIHC should encourage the hire of suitable systems which meet the immediate needs of Tanzanian capability expansion.

TPA has acquired a MBES system and is in the process of preparing their survey launch through an extensive refit.

11. The coastal zone area inside the 50m contour, including offshore banks and islands, should be outsourced via a project management organization as Tanzania does not have the expertise or capability to undertake this work. The suitability of lidar should be investigated; the NHC and Tanzanian Navy have been advised on what data can be acquired in the short term to assist in this study.

No action recorded.

12. GIC at UKHO should be approached to undertake the creation of a WGS84 geo-referenced coastline at 1:100,000 scale from LandSat imagery.

No action recorded.

13. The SAIHC should encourage the NHC to endorse the hydrographic scheme and remind them of the need to annually review progress.

Do not really know what scheme they are referring to. The INT Chart scheme for area H has been adopted by SAIHC and is managed by the SAIHC INT Chart Coordinating Committee.

3. West Indian Ocean Marine Highway Report 2010

4.9 Recommendations

Regulatory

TZ-1 The Government should be urged to expedite the implementation of SOLAS with its regulations and protocols. Unambiguous national legislation and policies should be drafted to ensure that all Ministries are clear on their specific responsibilities. In addition, the Ministry of Lands is urged to legally define the existence of the Hydrographic Office and its responsibilities.

No action recorded.

TZ-2 Advise the Tanzanian Government on the advantages of becoming a member of IHO in order to benefit from a direct knowledge of international standards and development programmes.

No action recorded.

Hydrographic and Cartographic

TZ-3 Although most of the coastal areas of Mozambique, Tanzania and Kenya needs to be re-surveyed, high priority should be given to the Zanzibar Channel including the approaches to the port of Zanzibar and its anchorage area. It should be considered to initially survey the Channel with laser bathymetry or satellite imagery techniques, from which potential critical depth areas can be detected and further investigated with modern acoustic methods. The same applies to the area of the Latham Bank, 40 nautical miles East of Dar es Salaam. The approaches to the port of Zanzibar and the anchorage area should be surveyed in accordance with the standards as described in IHO Special Publication S-44.

The approaches to Zanzibar and the port have been surveyed by a contractor on behalf of the WIOMHP and the data has been rendered to the PCA for updating the relevant charts.

TZ-4 Acquire a fully equipped survey launch with a capability to carry out (port and) coastal surveys. Such equipment to include single beam and multibeam echo sounders, side scan sonar, survey quality GPS and associated data acquisition and processing systems, together with the necessary modern software and computer systems to process the survey data.

Completed as far as TPA is concerned. MLHHSD is investigating the purchase of a MBES system in 2013.

TZ-5 Dependent upon the availability of a survey launch, training should be arranged at the Cat. A and Cat. B level to produce a body of trained hydrographic personnel. Methods of pursuing this personnel development have been discussed in this report. The concept of a regional training centre should be explored.

IHO Cat B surveyors have been trained with an IHO Cat A candidate identified with funds allocated by MLHHSD for an IHO Cat A course. All hydrographic staff, excluding those employed by TPA, require on-job training to gain experience.

Maritime Safety Information

TZ-9 Training in the maintenance of AtN, MRCC operation, GMDSS and VTS be ongoing so as to provide for succession of staff in order to keep the apparently effective systems in place.

Ongoing, training has been provided with further training in MSI required.

TZ-10 Whilst the receipt and transmission of information is taking place, it is recommended that this should be on a more formalised basis.

Ongoing.

Annex C – Tanzania Dependency on Hydrography and Charting

1. Introduction[2]

The United Republic of Tanzania comprises the mainland territory of Tanganyika and the off--lying islands of Zanzibar and Mafia. Zanzibar is a small archipelago comprising the two large islands of Unguja, commonly known as Zanzibar, and Pemba, together with a number of small surrounding islands.

The coast of Tanganyika is about 1500 kilometres in length. The country is bounded to the south by Mozambique; to the southwest by Malawi and Zambia; to the west by the Democratic Republic of Congo, Burundi and Rwanda; and to the north by Uganda and Kenya. Dar es Salaam is the largest city, main port and former capital of Tanzania; in 1996 the capital was transferred to Dodoma in the interior, but Dar es Salaam remains the economic and administrative centre.

Tanzania is bordered by three of the largest lakes on the continent: Lake Victoria (the world's second-largest freshwater lake) in the north, Lake Tanganyika (the world's second deepest) in the west, and Lake Nyasa (Lake Malawi) in the southwest

The United Republic of Tanzania[3]

The economy of Tanganyika is based mainly on the production and export of primary produce and the growing of foodstuffs for local consumption. The principal crops are sisal, cotton, coffee, cashew nuts and oilseeds. Diamonds are the most important mineral. There are large numbers of cattle, and hides and skins are valuable exports. Sardines and tuna are caught and exported.

Industry is largely concerned with the processing of raw material for either export or local consumption. Zanzibar provides the greater part of the world's supply of cloves, over 80% of the output being grown on Pemba; cloves and clove oil form more than half the exports of the two islands. Second in importance is the coconut industry. Tanzania's principal exports are coffee, cotton and cashew nuts; main imports are machinery, oil and oil derivatives, manufactured goods, chemicals and fertilisers.

2. Ports and Harbours[4]

Tanzania's ports and harbours are in two groups: sea and inland lake.

The nation's major seaports are:

> **Dar es Salaam port** is Tanzania's principal port with a rated capacity of 4.1 million (dwt) dry cargo and 6.0 million (dwt) bulk liquid cargo. The Port has a total quay length of about 2,000 metres with eleven deep-water berths. Dar es Salaam currently handles over 9 million tons of cargo per year which is equivalent to about 95% of all Tanzania's import and export volumes. In the container trade alone, growth has been over 12% per annum since 2000.[5]

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[2] NP3
[3] https://www.cia.gov/library/publications/the-world-factbook/geos/tz.html [Accessed 21 Nov 12]
[4] http://www.tanzaniaports.com/index.php?option=com_content&view=article&id=100&Itemid=270 [Accessed 21 Nov 12]
[5] http://www.trademarkea.com/wp-content/uploads/2012/09/TMEA-Summary-Sheet-Dar-22-5-12.pdf [Accessed 21 Nov 12]

The port serves the landlocked countries of Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a convenient freight linkage not only to and from East and Central Africa countries but also to middle and Far East, Europe, Australia and America. It is estimated that traffic to Dar es Salaam will increase by 240% in the next 15 years.[6]

Zanzibar. There are four small ports servicing the island of Zanzibar all of which come under the jurisdiction of the Zanzibar Ports Corporation, they are Malindi Slipway, Mkoani Port, Wesha Port and Wete Port.

Tanga port is situated on the northern coast of Tanzania close to the Kenyan border. Tanga is the longest serving port in East Africa and second largest in Tanzania. It is a lighterage port with two shallow water berths. The visiting ocean going vessels are anchored at stream buoys being a maritime safety requirement. Currently, the port has the capacity to handle 500,000 tonnes of cargo annually, but utilises only 76.5 per cent of that capacity. A 354-km highway links it to sister port Dar es Salaam in the South.

Mtwara deep water port built between 1948 and 1954 is situated approximately 20 miles north of Tanzania's border with Mozambique. Development of the deep water port was accompanied by railway construction from Mtwara and Nachingwea. With the failure of the groundnut scheme, the railway line fell into disuse and is now defunct. The port however, continues to function but is underutilized. In the past years, Mtwara Port operated between 20% and 35% of the installed port capacity, recently when the port attained 55% of capacity port utilization handling some 223,264 tons during 2010/11 against 84,354 tons handled in 2009/10.[7]

Mtwara Port

There are six minor seaports situated at Bagamoyo, Kilwa, Kwale, Lindi, Mafia and Pangani used by primarily by local coastal traffic.

Lake traffic is an important feature of Tanzania's maritime trade with ports situated at:

- **Lake Victoria** - Mwanza Port, Bukoba Port, Kemondo Bay, Musoma Port and Nansio Port
- **Lake Tanganyika** - Kigoma Port, Kigoma port is the best port in Lake Tanganyika and Kasanga Port
- **Lake Nyasa** - Itungi Port, Manda Port, Liuli port and Mbaba Bay Port

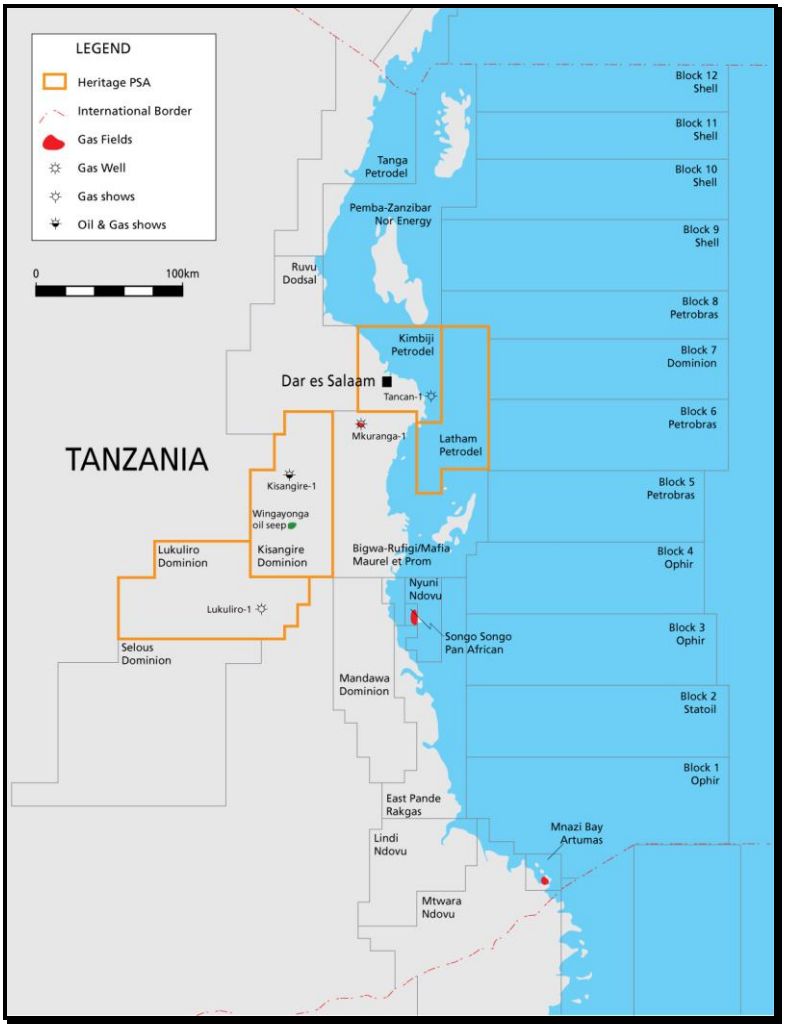
3. Cruise Ship Operations

There is almost no cruise ship activity in Tanzania.

[6] http://allafrica.com/stories/201211271476.html [Accessed 6 Dec 2012]
[7] http://www.tanzaniaports.com/index.php?option=com_content&view=article&id=131&Itemid=290 [Accessed 21 Nov 12]

4. Offshore Oil and Gas

Tanzania is endowed with many untapped energy sources including biomass, natural gas, hydropower, coal, geothermal, solar and wind power. Wood-fuel accounts for up to 92% of total energy supply with about 2% from hydro-electricity and 7% from oil-derived products. Oil and gas exploration and production is being encouraged with extensive gas fields having been identified off the coast at Songo Songo and Mnazi Bay both of which are in the process of being developed.[8]



Tanzania's Oil and Gas Exploration and Exploitation[9]

5. Maritime Claims

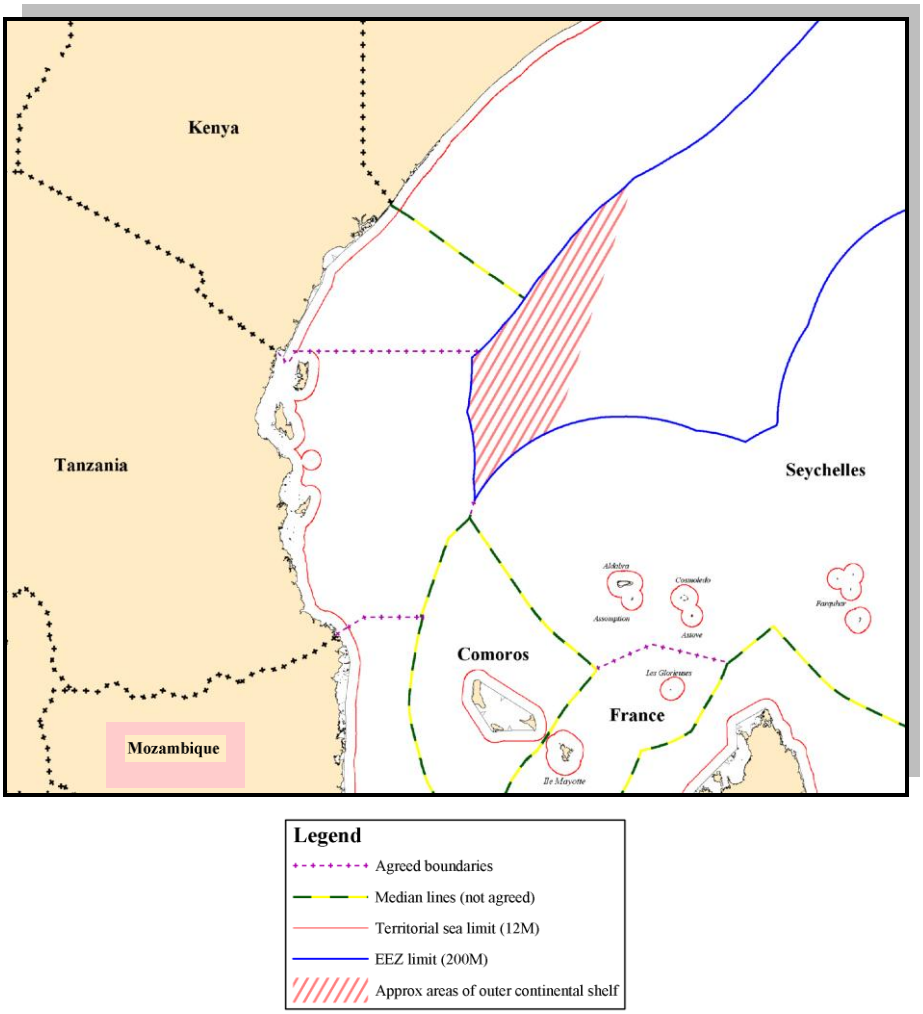
Tanzania claims a 12 mile territorial sea and an exclusive economic zone (EEZ) of 200 miles[10] and has a Continental Shelf area of approximately 17,000 square kilometres.[11] Tanzania ratified the United Nations Convention on the Law of the Sea (UNCLOS) in 1985 and became a Party to the Convention in 1994. In accordance with the provisions of Article 76 of the Convention, all coastal States that ratified the Convention before 13 May 1999 were obliged to submit before 13 May 2009 to the UN scientific and technical information that may allow them to be granted sovereign rights over an extended continental shelf limit. However, due to insufficient data, Tanzania submitted a Preliminary Information document on 7 May 2009 and made a full Submission to the UN on 18 January 2012. The UN invited Tanzania to make a presentation on the Submission before the Commission on the Limits of the Continental Shelf during its 30th Session in 2012. The UN is now

[8] http://www.mbendi.com/indy/oilg/af/ta/p0005.htm [Accessed 21 Nov 12]
[9] http://mergersandacquisitionreviewcom.blogspot.co.uk/2011/06/east-africas-tanzania-oil-and-gas.html [Accessed 21 Nov 21]
[10] NP39 p.9
[11] http://www.seaaroundus.org/eez/834.aspx [accessed 7 September 2012]

considering the Submission and will make recommendations regarding the claim in accordance with the Commission's Rules of Procedures.

The Norwegian government provided financial and technical assistance to Tanzania in developing the submission. During the implementation of this project the baseline of Tanzania was surveyed by Tanzanian surveyors in collaboration with the German Institute of Geosciences. The Ministry of Lands, Housing and Human Settlement Development is the lead ministry in the implementation of the Tanzania Continental Shelf Delineation Project.

The current state of negotiation of Tanzania's maritime boundaries is shown below.



Tanzania Maritime Boundaries[12]

6. Defence including Coastguard

The Tanzanian Navy had eight patrol and coastal craft in its inventory in 2011, a mix of 1970s and 1990s acquisitions, plus two second-hand Protector Class vessels delivered in 2005. The small fleet is generally considered to be equal to the modernised Kenyan fleet. Increasingly, navies in the East African region are attempting to achieve greater co-operation through the sharing of limited resources and from targeting their activities through the African Standby Force (ASF). There is considerable concern given to the reported use of the 1,420 km of the Tanzanian coast by South Asian and African trafficking syndicates, with numerous reported cases of illegal fishing, incidents of marine pollution and the development of offshore gas fields. [13]

No specific naval requirement for surveys was identified during the IHO Technical Visit, although it was mentioned that the lack of coastal survey data is considered to hamper inshore patrols by the Navy.

[12] UKHO Law of the Sea Department

[13] http://articles.janes.com/articles/Janes-Sentinel-Security-Assessment-Central-Africa/Navy-Tanzania.html [Accessed 21 Nov 12]

7. Environment

It was not possible for the IHO Technical Team to identify specific environmental requirements for surveys.

8. Sea Fishery

The fisheries sectors are artisanal and industrial. All artisanal fisheries take place within the 12 nautical miles territorial waters limit. The catch consists mostly of fin fish and to a small extent of shrimps. The fishery is dominated by the artisanal fishers small locally built craft and traditional fishing methods. The industrial sector operates in both the territorial waters and throughout the Exclusive Economic Zone (EEZ). The main target species in the territorial waters are shellfish (shrimps and lobsters), cephalopods and crabs. In the EEZ industrial fisheries generally target tuna, tuna-like species, marlin, sword fish and sharks.[14]

In 2005, a number of Fish Aggregating Devices (FAD) were moored in depths from 300 to 650 m along sections of the coast of Tanzania as part of a fisheries development trial. On the surface, a FAD is marked by a line of up to 25 yellow plastic floats on a wire 30 m in length; a 2 m pole, with radar reflector, may be present at the end of the float line. During the SE Monsoon, all or part of the float section may be submerged, re--surfacing during the NE Monsoon. Vessels are advised to maintain a safe distance of about 5 cables from FAD positions, the locations of which are promulgated by Temporary and Preliminary Notices to Mariners.[15]

9. Marine Reserves

The Marine Parks and Reserves Authority (MPRA) was established under the Marine Parks and Reserve Act (1994). It is managed by a board of ten Trustees whose role is to oversee the management and administration of marine parks and reserves to ensure sustainable use of the marine resources. The Board advises the Minster for Natural Resources and Tourism (MNRT) on the overall policy and legislative maters relevant to the conservation and management of Coastal and Marine resources.

The current marine parks and reserves governed by the board are listed below; further details can be obtained from http://www.marineparks.go.tz/index.php .

- Dar Marine Reserves, located in Dar es Salaam region. The Dar es Salaam Marine Reserves include Bongoyo Island Marine Reserve, Mbudya Island Marine Reserve, Pangavini Island Marine Reserve and Funguyasini Marine Reserve
- Maziwi Island Marine Reserves - located in Pangani district (Tanga region)
- Mafia Island Marine Park
- Mnazi Bay - Ruvuma Estuary Marine Park (MREMP) located in the Mtwara Region
- Transfrontier Conservation Area encompassing (TFCA) Southern Regions and areas bordering Lake Nyasa in the countries like Malawi and Zambia.

For the efficient management and safety of these parks and reserves they should be shown on all relevant navigational charts to warn the mariner of their existence. It is recommended that the NHC review the charting of all these designated areas. Charted marine parks and reserves are shown below.

BA Chart	Title	Marine Park and/or Reserve
1032	North Mafia Channel to Kilwa Point	Mafia Island Marine Park
2929	Mtwara to Mafia island	Mafia Island Marine Park
2949	Mtwara to Lamu	Marine Reserve; Malindi Marine National Reserve; Mafia Island Marine Park
3310	Mafia Island to Pemba Island	Ksite Marine National Park
3361	Pemba Island to Lamu	Malindi Marine National Reserve; Watamu Marine National Park; Ksite Marine National Park

[14] ftp://ftp.fao.org/fi/document/fcp/en/FI_CP_TZ.pdf [Accessed 21 Nov 12]
[15] NP3

10. Tourism and Coastal Recreational Amenities

Diving appears to be main marine based tourism in Tanzania.

11. Education and Science

There do not appear to be any educational or scientific programmes sponsored by Tanzania government requiring or including the gathering of hydrographic data.

12. Planned Maritime Developments in Tanzania Waters

Planned developments within Tanzanian waters noted by the IHO Technical Team are listed below.

Expansion of Dar es Salaam Port. Dar es Salaam port developments, excluding dredging of the channel depth, is estimated to be at a cost of $523 million which includes the building of new berths number 13 and 14 adjacent to Kurasini Oil Jetty and turning the single point mooring into a multipurpose facility. It is estimated that the construction of berths 13 and 14 would cost $400 million and funded by China

***Expansion of Mtwara port*.** Due to the increase in offshore oil and gas support vessel usage of this port there is a an intention to extend the wharf in both a NW and SE direction

***Construction of a new port at Mwambani (Tanga)*.** According to the TPA, the massive $1.4 billion expansion drive aims to serve new markets in South Sudan and neighbouring landlocked countries specifically, Uganda, DR Congo and Zambia. TPA Deputy Director General, Julius Mfuko said the authority has set aside $600 million for the construction of Tanga's new Mwambani port.

Construction of a new port at Mbegani (Bagamoyo). Considerations are being taken to establish a new port at Mbegani village near Bagamoyo town, about 60 Km. to the North of Dar es Salaam. However, hydrographic survey results have revealed that extensive capital dredging works would be required. Geotechnical investigations have also been carried out to assess soil conditions and a consultant has been engaged to look into the possibility of establishing a port at Mbegani; the report for which is being awaited.[16]

[16] Tanzania National Report to SAIHC September 2012

Annex D – Existing Hydrographic Data for Tanzania

1. General

Hydrographic data for Tanzania falls into two categories: modern Tanzania Ports Authority data and old British Admiralty data. Due to a lack of national capability to conduct surveys outside of Tanzania's ports little work has been done since independence. The main ports of Dar es Salaam and Zanzibar are well surveyed, the latter through a West Indian Ocean Marine Highway sponsored survey. Although relating mainly to deep water, survey data is available through offshore oil and gas programmes and UNCLOS claims that have not been used for charting. Similarly two TPA surveys have not yet been passed to the PCA (UKHO) for chart action. It is strongly recommended that all bathymetric data within Tanzania's waters is sent to the PCA (UKHO) at the earliest opportunity.

2. National Data

The Tanzania Ports Authority (TPA) carries out hydrographic surveys at the following Sea and Lake ports. Most recently at Dar es Salaam, Tanga, Lindi and Mbegani (Bagamoyo) monitor siltation build-up and dredging requirements. Surveys have been conducted by TPA at Tanga (BA663) and Lindi (BA681); TPA has indicated that the surveys will now be passed to the PCA (UKHO) for chart action.

Lake ports surveys have been conducted on Lake Victoria at Mwanza North and Mwanza South Ports in order to assess maintenance dredging requirements. Whilst on Lake Tanganyika surveys have been carried out at seven ports along Lake Tanganyika's coast line with a view to construct jetties. On assessing the results of the hydrographic survey jetties will be constructed at Lagosa, Kalya, Karema, Kagunga, Kirandu, Kipili and Sibwesa Ports. On Lake Nyasa hydrographic surveys have been carried out at Ltungi Port to assess dredging requirement and at Kiwira village for jetty construction.

Extensive UNCLOS 76 Extension of Continental Shelf surveys have been conducted; however, the data has not been released for charting.

The East African Community has launched a tender for a consultant to conduct surveys and charting of navigational routes and ports in the Lake Victoria Basin.

A number of seismic surveys, co-coordinated by the Tanzanian Petroleum Development Corporation (TPDC), for the search for oil and gas, have been conducted along the Tanzanian coast line out to approximately 80km offshore since 1978; however, none of this data has been released for the purpose of updating nautical charts.

The various authorities within the Tanzanian government holding or acquiring bathymetric data for various purposes should be strongly urged, possibly via the NHC, to release this data for charting.

3. West Indian Ocean Marine Highway Data

Surveys have been conducted in the approaches to Zanzibar; data from these surveys has been passed to the PCA (UKHO) for chart action.

4. United Kingdom Hydrographic Office

All survey data held by UKHO has been incorporated into the current published charts. This data is assessed further in this report.

5. Summary of Current State of Surveys

The current state of surveys as summarized in IHO Publication C-55 'Status of Hydrographic Surveying and Nautical Charting Worldwide' Third Edition (2004) updated 17 August 2011 is shown in the table below. Tanzania EEZ is approximately 241,540 square kilometres of which that <200m is approximately 16,930 square kilometres. Given the imprecise delineation of the 200m contour and the incomplete knowledge of surveys undertaken in Tanzania waters outside of the 200m contour the figures in and for C-55 are at best approximate. Given the limited research conducted by the IHO Team during its visit it has not been possible to revise the figures. [17]

[17] http://www.seaaroundus.org/eez/690.aspx [accessed 7 September 2012]

Annex E – Charting Analysis of Tanzanian Waters

1. Tanzanian Chart Coverage

The Republic of Tanzania does not have a chart production capability and relies historically on the UKHO to fulfil this function. The résumé of chart coverage for Tanzania shown in IHO Publication C-55 - *Status of Nautical Charting* (updated 17 August 2011) is shown in the table below. The figures in brackets show revised values as supplied by the PCA (UKHO) for this report.

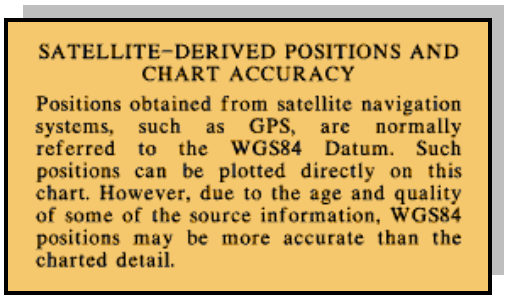
Chart Type	% Covered by INT Charts	% Covered by RNCs	% Covered by ENCs
Small Scale: Offshore Passage	100 (100)	100 (100)	50 (100)
Medium Scale: Landfall, Coastal Passage	100 (100)	100 (100)	40 (80)
Large Scale: Approaches and Ports	100 (100)	100 (100)	50 (50)

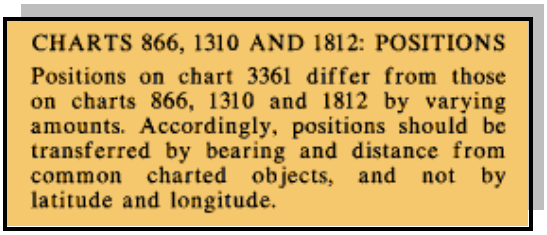
IHO C-55 Status of Chart Coverage

While C-55 shows that Tanzania is well covered by charts, it must be noted that the assessment applies only to charts produced by the PCA (UKHO) of which the quality of the data of most of those charts is old, inadequate and of variable accuracy. The status as shown in C-55, although correct is potentially misleading.

2. British Admiralty Charts

For historical reasons the United Kingdom, through UKHO remains the Primary Charting Authority (PCA) for Tanzania. Of the 20 charts produced by the PCA of Tanzania's waters 13 are referred to WGS 84; the others are on varying reference systems such that making the transfer of positions from chart to chart difficult and possibly inaccurate. The data from which the charts are compiled is noted as being in many cases old, imperfect and on undefined reference systems such that some charts carry the warning notes such as those below:





The published charts and current state of maintenance is shown in the table below, a fuller discussion of the charts and the data upon which they are based can be found in Section 3 below.

BA Chart INT Chart	Title	WGS84	Scale	Published Lasted Updated
661	Approaches to Kilwa Kisiwani Harbour	Yes	1:75,000	Ed 2 17 Dec 2009
	Kilwa Kisiwani Harbour	Yes	1:35,000	NM4596/12
663	Approaches to Tanga	Yes	1:37,500	28 Aug 1997
INT 7698	Tanga	Yes	1:15,000	NM3455/10
665 INT 7695	Approaches to Zanzibar	Yes	1:50,000	Ed 2 13 Sep 2012 -
674 INT 7691	Approaches to Dar es Salaam	Yes	1:50,000	Ed 3 21 Dec 2000 NM4540/12
681	Lindi Bay	Yes	1:25,000	Ed 2 10 Dec 2009
	Lindi Harbour	Yes	1:12,500	-
684	Mtwara and Mikindani Harbours	No	1:36,286	NE 6 Jan 1950
	Mikindani Harbour	No	1:18,144	NM1448/11
687	Kiswere Harbour	No	1:24,187	LC Jan 1903 NM3704/06
690	Cabo Delgado to Mikindani Bay	No	1:72,800	LC 18 Nov 1960
	Msimbati	No	1:24,187	NM3704/06
691	Mtwara Harbour	No	1:12,500	31 May 1948 NM1448/11
693 INT 7692	Dar es Salaam	Yes	1:7,500	Ed 5 11 Oct 2012 -
865	Plans on the Tanganyika Coast			12 Dec 1930
	Mto Sudi	No	1:18,150	3704/06
	Mchinga Bay	No	1:18,150	
	Pangani Rover	No	1:12,500	
866	Plans in the Tanganyika and Kenya			NE 24 Nov 1950
	Moa or Gomani Bay to Funzi Bay	No	1:50,000	NM5353/07
	Wasin Channel	No	1:25,000	
	Moa or Gomani Bay	No	1:25,000	
1032	North Mafia Channel to Kilwa Point	Yes	1:150,000	Ed 2 22 Jan 2004 NM4112/12
1310	South West Coast of Pemba Island	No	1:48,370	NE 14 Nov 1958 NM3455/10
2927 INT 7970	Pemba to Mtwara	Yes	1:350,000	Ed 2 5 Jul 2012 -
2929 INT 7680	Mtwara to Mafia island	Yes	1:350,000	Ed 1 9 Oct 2003 NM4596/12
2949 INT 7056	Mtwara to Lamu	Yes	1:100,000	21 Jul 2005 NM4596/12
3211 INT 7696	Zanzibar Harbour	Yes	1:12,500	Ed 3 13 Sep 2012 NM1707/12
3310 INT 7690	Mafia Island to Pemba Island	Yes	1:350,000	28 Aug 1997 NM4540/12
3361 INT 7700	Pemba Island to Lamu	Yes	1:350,000	Ed 2 22 Aug 2002 NM3455/10

Summary of UKHO Charting

3. Review of Current Charting

Nautical charting of the Republic of Tanzania is provided primarily by the United Kingdom Hydrographic Office as the PCA and INT chart producer. The UKHO charting of Tanzania and its outlying islands is of variable quality relying with notable exceptions in the main ports of Dar es Salaam and Zanzibar on data between 90 and 130 years old. The table below summarizes the current state of BA charting and provides an assessment of each chart with a recommendation for its future publication.

	Retain current chart or plan with or without additional data.
	Delete current chart or plan and replace with a new chart or plan with or without additional data.
	Delete current chart or plan.

BA Chart INT Chart		Title	Remarks
661		Approaches to Kilwa Kisiwani Harbour	This WGS 84 referenced metric chart is based on medium to small scale leadline surveys dating from between 1824 and 1877 with some soundings taken from a German chart of 1904. Whilst the chart may be reference to WGS 84 the hydrographic data on which it is based will not. This harbour is used as a supply base for the offshore oil and gas industry. Transfer of materials is primarily by barge and consequently the building of a jetty in the deep water area of Port Beaver is being investigated. It is suggested that the limits of the chart be revised to terminate at a southern limit of 9º 5'S and that the inset plan is extended NW to Ras Punguyuni to include the whole of Port Beaver.
		Kilwa Kisiwani Harbour	This WGS 84 referenced metric plan is derived from a leadline survey from 1877. See notes for Approaches to Kilwa Kisiwani Harbour above.
663 INT 7698		Approaches to Tanga	This WGS 84 referenced metric chart is based primarily on leadline surveys from 1878 with supplementary data from early single beam surveys between 1938 and 1944. Whilst GPS positions may be plotted directly onto the chart, it should be noted that the hydrographic data on which the chart is based will not be referenced to WGS84. Development work is planned for Mwambani Bay to the S of Tanga. The plan includes a jetty out SE from Mwambani village into deep water. The new facility will be linked to Musoma on Lake Victoria by a new railway. See also Tanga below.
		Tanga	This WGS 84 referenced plan is derived solely from surveys carried out between 1942 and 1944. Tanga takes a considerable amount of local traffic. Tanga Quay was dredged to 3.5m in 2009 or 2010 and surveyed by TPA; the data will be forwarded to UKHO for charting.
665 INT 7695		Approaches to Zanzibar	This WGS 84 referenced metric chart is largely derived from large to medium scale surveys from between 1951 and 1953 with three modern surveys in the approach channels to Zanzibar dating from 2011. The latest surveys of the approaches to Zanzibar are included on the published chart. No further action is required at present.
674 INT 7691		Approaches to Dar es Salaam	This WGS 84 referenced metric chart is largely derived from large to medium scale surveys from between 1873 and 1874. There are two developments in the approaches to Dar es Salaam. A new pipeline is under construction at the Mjiwema Oil Terminal to the E of Dar es Salaam with a second SBM to be installed; TPA will forward details to UKHO in due course. Land reclamation is planned in the vicinity of Msimbati Bay (7º 47'.5S 39º 18'.0E).

BA Chart INT Chart		Title	Remarks
681		Lindi Bay	The approaches depicted on this WGS 84 referenced metric chart were surveyed in 1874-77. Inside the bay to Lindi harbour survey data is from 1946-1959 whilst the remainder of the upper reaches of the river originate from the 1874-77 surveys.
		Lindi Harbour	This WGS 84 referenced metric chart is largely derived from large scale surveys from between 1946 and 1959. TPA considers this to be a critical port in the country's maritime infrastructure. The jetty at Lindi (10º 00'S 39º 43'E) suffers from siltation. Dredged to 4.5 m in 1998 it has since silted up again. TPA has conducted a survey of Lindi and will forward to UKHO. There is a plan to extend the existing jetty eastwards into the mainstream to prevent further silting.
684		Mtwara and Mikindani Harbours	This fathoms and feet chart is derived from surveys from 1874 with additions from 1947. This port is being used extensively by supply vessels used in the offshore oil and gas industry such that plans are being discussed to extend the main wharf at Mtwara NW and SE. It is suggested that with developments at Mtwara and Mikindani that charts BA684 and 691 are amalgamated and published with inset plans of Mtwara and Mikindani. See also Mikindani Harbour below.
		Mikindani Harbour	This fathoms and feet chart is derived from surveys from 1874. There are development plans to build a jetty at Mikindani for the bulk export of cement.
687		Kiswere Harbour	This fathoms and feet chart is derived from surveys from 1874. This port is being developed as part of the growing in support of the growing offshore oil and gas industry. TPA plan to survey the port in 2013.
690		Cabo Delgado to Mikindani Bay	This fathoms and feet chart is derived from surveys from 1874 with additions from a Portuguese chart dated 1955. See also BA684 and BA 691
		Msimbati	This fathoms and feet chart is derived from surveys from 1874 There is little or no commercial activity here.
691		Mtwara Harbour	This fathoms and feet chart is derived primarily from a survey dated 1949. See remarks for BA684 and BA690
693 INT 7692		Dar es Salaam	This WGS 84 referenced metric chart is primarily based on good modern data. There are plans to extend berthing at the port from the root of the Coaster Oil Jetty to the Tanzania Port Authority Dockyard (6º 50'.8S 39º 18'E) as berths 13 and 14. In addition consideration is being given to deepening the main channel.
865		Mto Sudi	This fathoms and feet chart is derived from surveys from 1874. Used only by local dhow traffic. Suggest delete plan.
		Mchinga Bay	This fathoms and feet chart is derived from surveys from 1874. Used by supply vessels in the offshore old and gas industry. New surveys are required if the plan is to be retained.
		Pangani Rover	This fathoms and feet chart is derived from a German chart from 1915 with additions from a survey in 1922 by the Marine Department, Dar es Salaam. TPA has installed new transit beacons in lieu of the previous beacons with the same positions and light characteristics. Used by tourist yachts and dive vessels. New surveys are required if the plan is to be retained.
866		Moa or Gomani Bay to Funzi Bay	This fathoms and feet chart is derived from surveys from 1888 with additions from 1929 Mainly Kenyan waters. See comments for BA3310 and BA3361.
		Wasin Channel	This fathoms and feet chart is derived from surveys from 1888 Kenyan waters.
		Moa or Gomani Bay	This fathoms and feet chart is derived from German surveys from 1892-3 with parts from a British survey dated 1888. No appreciable commercial activity. Suggest delete plan.

BA Chart INT Chart	Title	Remarks
1032	North Mafia Channel to Kilwa Point	This WGS 84 referenced metric chart is derived from surveys out to approximately the 100m contour dating from small scales surveys dating between 1875 and 1919. There has been no systematic survey conducted outside of the 100m contour. This is tourist area used mainly for diving. A new jetty is planned to be built extending NW from Kilindoni (7°55'S 39°39'E).
1310	South West Coast of Pemba Island	This fathoms and feet chart is primarily derived from British surveys from 1889 with the northern portion from a British survey dated 1957. This area is now only used by local fisherman. Suggest delete chart
	Continuation of West Coast	This fathoms and feet chart is primarily derived from British surveys from 1889 with the northern portion from a British survey dated 1957. No appreciable activity. Suggest delete plan.
	Mchengangazi	This fathoms and feet chart is primarily derived from British surveys from 1889 with the northern portion from a British survey dated 1957. No appreciable activity. Suggest delete plan.
2927 INT 7970	Pemba to Mtwara	This chart covers mainly Mozambique waters; however the northern portion provides the approach chart for Mtwara and Mto Sudi. The Tanzanian waters covered by this charted, unlike the Mozambique waters, are not well surveyed. General chart for coastal passage. This chart should form part of the rationalization of BA684, 690 and 865.
2929 INT 7680	Mtwara to Mafia island	This WGS 84 referenced metric chart is derived from surveys out to approximately the 100m contour dating from small scales surveys dating between 1875 and 1919. There has been no systematic survey conducted outside of the 100m contour. Given the deep water relatively close inshore, in most please at one mile; the chart is adequate for coastal passage. General chart for coastal passage.
2949	Mtwara to Lamu	This WGS 84 referenced metric chart is derived from surveys depicted on the larger scale charts. There has been no systematic survey conducted outside of the 100m contour. Given the deep water relatively close inshore the chart is adequate for coastal passage. General chart for coastal passage.
3211	Zanzibar Harbour	This is a WGS 84 referenced metric chart. Wide channels were surveyed by swath sounding systems in 2011 to give full seafloor coverage. The remainder of the chart is derived from large scale British surveys from 1953. No comments further comments required.
3310 INT 7690	Mafia Island to Pemba Island	This WGS 84 referenced metric chart is derived from surveys out to approximately the 100m contour dating from small scales surveys dating between 1873 and 1958. There has been no systematic survey conducted outside of the 100m contour. Given the deep water relatively close inshore, in most places at one mile, the chart is adequate for coastal passage. Given the level of activity on the Tanzania/Kenya border this chart might serve with BA3361 in lieu of BA866.
3361	Pemba Island to Lamu	This WGS 84 referenced metric chart is derived from surveys out to approximately the 100m contour dating from small scales surveys dating between 1873 and 1889. There has been no systematic survey conducted outside of the 100m contour. Given the deep water relatively close inshore, in most please at one mile, the chart is adequate for coastal passage. Given the level of activity on the Tanzania/Kenya border this chart might serve with BA3310 in lieu of BA866.

Annex F – IHO Yearbook Revision

TANZANIA (UNITED REPUBLIC OF)

HYDROGRAPHIC SURVEYS SECTION Directorate of Surveys and Mapping Ministry of Lands, Housing and Human Settlements Development P.O. Box 9132 DAR ES SALAAM	
Department of which the Hydrographic Office is part – Ministère dont dépend le Service Hydrographique – Ministerio del que depende el Servicio Hidrográfico	Ministry of Lands, Housing and Human Settlements Development
Principal functions of the H.O. – Attributions principales du S.H. - Principales funciones del S.H.	Definition of National hydrographic policy and the provision of the secretariat for the National Hydrographic Committee.
National day – Fête nationale – Fiesta nacional	9 December
Telephone: **Fax:** **E-mail:** **Website:**	+ 255 767 280 102 +255 212 4576 lyamuya@yahoo.com lyamuyaj@ardhi.go.tz www.ardhi.go.tz
Date of establishment and Relevant National Legislation – Date de fondation et législation nationale concernée – Fecha de establecimiento y Leyes nacionales de referencia	Hydrographic Section established 1984.
Name and rank of the Director or Head – Nom et grade du directeur – Apellidos y graduación del Director	Mr. Justo Nicholas LYAMUYA, Assistant Director
Tonnage – Tonelaje	
Total Budget – Budget total – Presupuesto Total	
Staff employed – Effectifs – Plantilla **- Hydrographers (Name and rank of managing staff)** - Hydrographes (Nom et grade du personnel de direction - Hidrógrafos (Apellidos y graduación del personal directivo)	Three Cat B Hydrographic Surveyors
Surveying vessels/ Aircraft - Bâtiments hydrographiques/aéronefs - Buques Hidrográficos/Aeronaves	None
N° of charts published - *Nombres de cartes publiées - N° de cartas publicadas.*	(Chart Area of coverage) Own waters of Tanzanian Coast, British Admiralty Charts are used.

TANZANIA (UNITED REPUBLIC OF)

TANZANIA PORTS AUTHORITY P.O. Box 9184 DAR ES SALAAM	
Department of which the Hydrographic Office is part – Ministère dont dépend le Service Hydrographique – Ministerio del que depende el Servicio Hidrográfico	Ministry of Transport, PO Box 9144, Dar es Salaam
Principal functions of the H.O. - Attributions principales du S.H. - Principales funciones del S.H.	Hydrographic surveys in ports, maintenance and improvement of navigational aids in harbours and along the coast of Tanzania, Dredging to maintain depths at channels and berths, Notices to Mariners.
National day – Fête nationale – Fiesta nacional	9 December
Telephone: **Fax:** **E-mail:** **Website:**	+ 255 22 211 0401/9 +255 22 211 3938 or 211 3432 dg@tanzaniaports.com prm@tanzaniaports.com www.tanzaniaports.com
Date of establishment and Relevant National Legislation - Date de fondation et législation nationale concernée – Fecha de establecimiento y Leyes nacionales de referencia	1969
Name and rank of the Director or Head - Nom et grade du directeur – Apellidos y graduación del Director	Mr Ignatious K Nhnyete nhnyete@tanzaniaports.com nhnyete@yahoo.com
Tonnage – Tonelaje	Not applicable
Total Budget - Budget total – Presupuesto Total	
Staff employed - Effectifs – Plantilla **- Hydrographers (Name and rank of managing staff)** - Hydrographes (Nom et grade du personnel de direction - Hidrógrafos (Apellidos y graduación del personal directivo)	For details consult the WEB site : http://www.tanzaniaports.com
Surveying vessels/ Aircraft - Bâtiments hydrographiques/aéronefs - Buques Hidrográficos/Aeronaves	One survey launch with SBES and MBES
N° of charts published - *Nombres de cartes publiées - N° de cartas publicadas.*	(Chart Area of coverage) Own waters of Tanzanian Coast, British Admiralty Charts are used.