



Ministry of Foreign Affairs

Maritime Training in Zambia

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Maritime Training in Zambia

MAG17ZM02

Final Report



Training Workshop 'Capacity Development in Maritime Operations', Zambia (January, 2020)

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Introduction, Background and Institutional Setting

The main objective of the project is to develop maritime training capacity and facilities in Zambia contributing to the upgrade of the Mpulungu Harbour which will professionalize and increase traffic and trade on Lake Tanganyika. This will boost exports and economic development of the Northern regions of Zambia and surrounding countries (Burundi, DRC, Tanzania).

The long term goal of the project is to provide the Zambian maritime sector with qualified and trained staff at operational and management level. The amplification of the skillset of people working in the maritime sector will have a positive effect on the Zambian economy by effectively improving business activities. Training activities of this project will also strengthen local and national awareness of health and safety issues, and stimulate the adoption of international conventions and protocols related with maritime navigation.

The Republic of Zambia - though landlocked - is blessed with a number of lakes and rivers which are situated in various parts of the country. Consequently, Zambia has potential for an effective water transport system. One of the major lakes is Lake Tanganyika which has one international port at the Zambian coastline, the Mpulungu Harbour, a potential gateway to the Great Lakes Region (GLR). However, as the entire water transport sector had not yet been prioritized in terms of development, not much resources were allocated to the development of water transport. In general, the sector is seriously under-resourced and investments over the past decades have been very minimal.

The development of the maritime sector in Zambia has been facing the following key issues and challenges:

- Lack of adequate marine infrastructure for further development such as landing jetties, transit warehouses, cargo-handling equipment and landing bays/platforms, slipways, passenger shelters.
- Lack of navigation aids: navigation aids are totally absent.
- Lack of workshop facilities: government workshop facilities are non-existent. When repairs and maintenance are needed, the engines have to be dismantled and carried to distant places mainly in Lusaka and the Copper-Belt. Availability of spare parts is another problem.
- Capacity building: most officers are only occasionally trained.
- Funding constraints: the maritime sector is the least funded of the four modes of transport thereby lagged in infrastructure development.
- Capacity constraints amongst government officials.

The implementation of this project intends to help to address mainly some issues regarding capacity building. In the first place through providing technical assistance for the development of a maritime vocational training school in Mpulungu Port, Zambia and

secondly by investing in capacity development at governmental level.



Zambia has been exporting products to the Great Lakes Region through Mpulungu Port since 1977. Products mainly exported are cement and sugar from companies such as Lafarge, Dangote and Zambia Sugar Limited. Average monthly volumes for the main commodities (cement and sugar) are around 10,000 MT. There are other seasonal agro-products, like maize grains with an average of 5,000 MT per month when exports are permitted. Around 98 % of the formally transported goods between Tanzania, DR Congo, Burundi and Zambia on Lake Tanganyika are exported from Zambia. At the same time, there is a considerable lack of Zambian shipping capacity, with the majority of ships originating from the surrounding countries. Besides international exports, Mpulungu Port is also a hub for local shipping, in-country trade along the shores of Lake Tanganyika. There are smaller passenger and cargo vessels that operate between Mpulungu and Nsumbu, which pick up passengers with their cargo.

Mpulungu Port has ambitious plans for developing its infrastructure and purchasing new handling equipment per 2020, mainly funded by the AfDB and The Government of the Netherlands through the DRIVE project. Simultaneously, also the Port of Bujumbura in Burundi has similar plans to rehabilitate and expand its port facilities. Trade through both ports has been growing steadily over the years and the prospects for continued growth are good.

Along with the planned infrastructural developments, increased knowledge and skills are needed amongst the various players in the maritime transport, port, transport and logistics sector in Zambia to further accommodate the growing freight and passenger flows.

Knowledge and skills are needed in areas where the sector is deficient and amongst others include: vessel and cargo handling skills; maritime navigation and safety; naval architecture; port operations; port state control; maritime business management; marketing; maritime administration; and improved communication and use of information technology.

Also regional cooperation amongst the countries along Lake Tanganyika needs strengthening. Technical skills and knowledge on survey and registration of ships/vessels; mechanical and electrical engineering; and navigation and nautical expertise should be upgraded as well. Training is also necessary in shipping and logistics management to assist in the transposition of the international conventions and protocols into national legislation. The need for skills development is accentuated by Zambia's intention to establish a shipping line. Acquisition of competences related to shipping line management and operations is required for effective roll out and maintenance of the shipping line.

The Government of the Republic of Zambia has identified the border facilities at Nakonde (border with Tanzania) and Mpulungu as priority areas for investment in order to facilitate trade growth in the northern part of the country. It is quite certain that investment in long term training of those working in the harbour will have considerable impact on the realization of a competent Zambian maritime sector in the Northern province and Zambia at large.

In line with the 7th National Development Plan, capacity building is vital in all modes of transport of which water transport sector currently seems to have recorded progress in the acquisition of skills and capacity development. The Ministry of Higher Education Strategic Planning does provide information about vocational to tertiary educational levels and is involved in curriculum development. The Ministry is responsible for the establishment of vocational training. The Ministry of Transport and Communications oversees the maritime sector. A request to establish a maritime training school was submitted by the ministry to the Netherlands Enterprise Agency (RVO). The ministry would like to upgrade the skills of maritime sector employees as well as train new entrants into the sector. This is necessary to build a cadre of people capable of managing and operating within a modernised maritime sector.

As mentioned before, Zambia is presently planning upgrading its harbour at Mpulungu with the support of international donors and is also in the process of establishing a national shipping line. Further, it has acquired other capital equipment for the maritime sector such as dredgers. These infrastructural and logistical investments will in the long term provide job-opportunities but also require the presence of specific competences and skills to manage and operate them. This project aims at the sustainable development of those skills and knowledge through the establishment of a maritime vocational school at Mpulungu.

In order to establish a maritime vocational training school in Zambia, also an improvement of the in-house knowledge of DMIW (Department of Maritime & Inland Waterways in the Ministry of Transport and Communications staff who formally carry the regulatory mandate) is needed.



There are primarily two target segments for training, Department of Maritime and Inland Waterways-DMIW staff of the Ministry of Transport and Communication and others (extra DMIW staff). DMIW has immediate oversight of the sector. It has senior and middle management staff. Its top level staff must devise appropriate sector strategies and plans. They require capacity building. Mid to low level staff deal with areas such as vessel inspection, registration, traffic management, and safety. They require vocational training. Outside the department, people require competences in vessel piloting etc. Senior to mid-level management of port authorities require capacity building while lower management staff require vocational training.

Maritime safety standards, in compliance with international IMO regulations, are required to train staff in the following: licensing and certification and watch keeping for vessel crew qualification should first be set especially naval architect (based on vessel dimensions and types/tonnage/kw power). Based on the approved standards, curricula for maritime vocational training have to be set and first training sessions started.



Mpulungu Port, January 2020



Mpulungu Port, January 2020

Project Summary

The contract of the project was signed on July 16/17, 2018 and the kick-off meeting was held at the premises of RVO in The Hague on August 13, 2018. On January 31, 2020 the end-of-project meeting took place in Lusaka, Zambia.

The project consists of four main activities:

- 1) Inception phase.
- 2) Feasibility study for establishing a Maritime Training Institute in Mpulungu.
- 3) Capacity building of officials in maritime affairs; establishment of maritime qualification standards; engaging regional authorities around Lake Tanganyika and promoting regional agreement on maritime training standards and certification; elaboration vocational training programmes.
- 4) Vocational training.



Port operations at the Harbour of Mpulungu, September 2018

Below an overview of these four main activities carried out by the project:

	Deliverable
Activity 1 Inception	Inception report including work plan
Activity 2 Feasibility study	Analysis of existing and non-existing maritime capacity/skills within public and private institutions & identification of skills gap(s) per stakeholder
	Maritime skills training program for public institutions developed
	Initial set-up of maritime vocational training program
Activity 3 Capacity building	Maritime skills training undertaken. Training of officials, new and current personnel in the Department of Maritime and Inland water ways, port authorities, and other maritime related entities.
	Best practices exchanged between the Netherlands and the Zambian authorities, education institutes and private companies.
	Maritime qualification standards and certification system established in Zambia
	Maritime authorities in the Great Lakes (Tanzania, Burundi, DR Congo) engaged with a view to securing regional agreement about maritime training standards and certification
	Set-up of maritime vocational training program, with explicit attention for major capacity gaps and training needs of the Great Lakes Countries
Activity 4 Vocational Training	Participation of students in the maritime vocational training program

Results of the Feasibility Study for Establishing a Maritime Training Institute in Zambia

In January 2019, a feasibility study was submitted for the establishment of a Maritime Training Institute in Zambia.

A validation workshop was organised by the Netherland Enterprise Agency (RVO) and the Netherlands Foreign Ministry for two studies: 1) maritime trade and transport on Lake Tanganyika and 2) the establishment of a Maritime Training Institute in Zambia. This workshop took place in Lusaka, Zambia in July 2019. The purpose of the workshop was to present the findings of the studies and to discuss the next steps and actions.

A mission to Zambia, Burundi and DRC over the period 24 Sept – 03 Oct 2019 took place to carry on with the feasibility study for the establishment of a Maritime Training Institute in Zambia:

- i. Addressing the needs of Zambia regarding training and capacity development in the field of maritime transport, together with capacity development and vocational training in port, transport and logistics.
- ii. Supporting the Lake Tanganyika Authority (LTA) maritime sector with capacity development within their operational mandate;
- iii. Promoting the positive effect on promoting economic trade opportunities on Lake Tanganyika;
- iv. Promoting compliance with requirements of International Maritime Organisation (IMO) in terms of maritime skills operating within regulated and international standards on Lake Tanganyika.

Rationale of the establishment of the Maritime Training Institute

Developments within the project indicated that authorities in Zambia, Burundi and DRC showed keen interest to commence engaging with the Project Team with respect to a regional approach. The mission noted the following opportunities:

- i. The ownership of the infrastructure including equipment of the MTI.
 - Recommendation is that ownership of the MTI in Zambia should be a public institution (Zambian Ministry of Transport) possibly in a private partnership with, for instance, Mpulungu Port Operating Company and possibly STC as well as operator/training services provider or manager alongside Mpulungu Harbor.
 - In Burundi, the Ministry of Transport, Global Port Services (GPS) as the Port Operating Authority and STC showed interest in establishing a Maritime

Training Institute as well. The idea was not to establish a duplicate full-fledged MTI but rather aspects of the MTI that could be localized such as port training and vocational training while maritime training remained centralized due to its nature.

- ii. A regional approach for such a maritime training institute is welcomed and accepted centralized maritime training, decentralized/localised vocational and port operations training. The centralized training to take place in Mpulungu Zambia where the project was initiated by request of the Zambian Ministry of Transport.
 - Recommendation is that the respective Departments of the Ministries of Transport meet and sign agreements as partners linking the respective Ports, Bujumbura and Mpulungu, as a start. Agreement on maritime safety standards on the lake that can be adhered to prior to IMO standards implementation. This also affects acceptance of training skills provided by one country within the other country
- iii. Relation to a needs assessment and looking at business case proposition within the respective Ports.
 - Recommendation is that Port Authorities meet and sign agreements in terms of information exchange, business trade relations and other operational requirements as port operating partners. Aspects of this formalized relationship should be clarified a priori since the ports visited already correspond/trade with each other.
 - Private sector business companies to meet with Port Managers and engage in port operational structures in terms of port fees; port operational schedules; new trade methods and commodities, etc.

Conclusion on the rationale

The most important rationale for the establishment of the Maritime Training Institute is to provide training, education and capacity development in the maritime domain and the port domain in Zambia, but, possibly also for the neighbouring countries along Lake Tanganyika: Burundi (French), DRC Democratic Republic of Congo (French) and Tanzania. The MTI will also promote, facilitate and carry out vocational training in the wide area of maritime, ports, transport and logistics.

The Maritime Training Institute (MTI) will be built upon three pillars of training programmes: a) maritime training; b) port training; c) vocational training related with transport and logistics.

The Maritime Training Institute may also play an important role in setting and implementing regional standards for navigation on Lake Tanganyika, together with the Lake Tanganyika Authority (LTA) and become the host and initiator for closer cooperation between Zambia, Tanzania, Burundi and DR Congo on safe, secure and environmentally friendly navigation on Lake Tanganyika.

Location

It is proposed to locate the Maritime Training Institute (MTI) in Mpulungu in the Northern Province of Zambia on the shore of Lake Tanganyika. Fire ground and swimming pool area needs to be established on the property for training purposes. It is possible that the Maritime Training Institute will extend its facilities towards other locations in Zambia. The main reason for the selection of Mpulungu as location of the Maritime Training Institute is that there are real perspectives for rehabilitation and expansion of the Port of Mpulungu and the building of a shipyard. There is also strong support from the municipality of Mpulungu and the District Commissioner for establishing vocational training in maritime, ports, transport, warehousing and logistics to give a boost to the regional economic development. This integration of maritime, port and transport and logistics education would have a significant impact on the regional economic growth and employment.

Ownership

The preferred option is that the main infrastructure and facilities of the Maritime Training Institute will be owned by the Government of Zambia, in particular by the Ministry of Transport as the domain of maritime and inland waterway transport fall under its domain. The Ministry of Transport is responsible for the setting of standards for education, training and capacity development in maritime transport in compliance with the international standards prescribed by the International Maritime Organisation (IMO) in close cooperation with the Ministry of Higher Education and TEVETA (Authority for Technical and Vocational Training), where needed. Support from the Ministry of Transport, the Ministry of Education and TEVETA is important. The Maritime Training Institute can become a pilot for developing certified professional and vocational education and training in Zambia. The Ministry of Transport is genuinely interested in establishing the Maritime Training Institute, in particular the Department of Maritime and Inland Waterways. They do not have the capacity for the management and operation of the Maritime Training Institute. The management and operations of the Maritime Training Institute should be outsourced to the private sector.

Management and operations

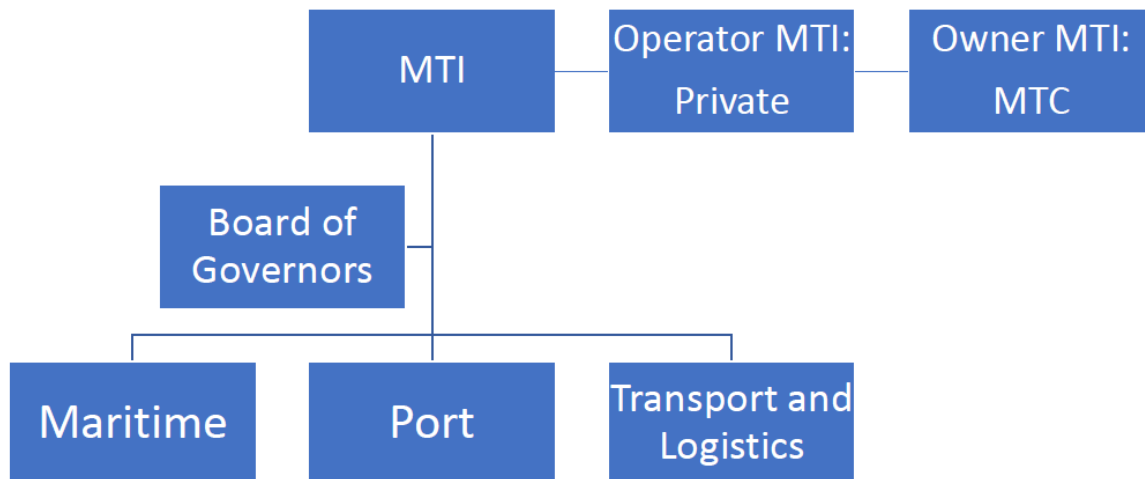
It is proposed that the management and operations of the Maritime Training Institute will be carried out by both public and private sector institutions, associations and companies, including Mpulungu Harbour Corporation together with other institutions such as for example the STC Group, which has its headquarters in the Netherlands, but also does have international regional training institutions such as STC Southern Africa, which operates, amongst other activities, a Maritime College in Cape Town.

It is proposed to have one managing director and three managers/trainers for 1) maritime education and training, 2) port education and training and 3) vocational training in transport and logistics, respectively.

Supervisory board

The Maritime Training Institute would need to have a Supervisory Board with representatives from the Ministry of Transport, Industrial Development Corporation (IDC), Port Authority, STC, business associations, relevant private sector representatives such as the shipbuilding industry and shipping lines, knowledge institutes, Lake Tanganyika Authority (LTA), etc.

Below a simplified structure for the Maritime Training Institute:



Five-year operational plan 2020-2024

A five-year operational plan is being developed for the Maritime Training Institute focusing on maritime and port related training¹ with an estimated total budget of 5 million USD to cover costs for refurbishment of the building; class room and office equipment (including power supply, IT and communication); installation of a workshop for practical education and training; running costs; permanent and temporary staff and personnel; development of training tools and materials; transport; marketing and dissemination; etc. This amount of 5 million USD includes a budget of 1.5 million USD for refurbishment of the buildings and the purchasing of equipment² and 700,000 USD per year operational costs including rent of the venue. for five years of operation of the Maritime Training Institute is based on experiences of STC elsewhere in the world. The permanent staff of the Maritime Training Institute will consist of about 10 persons without taking into account the teachers and trainers for the classes and courses. It is expected that the MTI after the first five years will recover 70 per cent of its operational costs by income generated by delivering training programmes, while the Government still would need to finance the remaining 30 per cent. These estimates are based on experiences of STC elsewhere in the Africa. It is very difficult to foresee whether the MTI can also play an

¹ For vocational training we propose to have a distinct structure with a separate budget to facilitate financial mobilization from other sources such as ILO, EU, etc. The Maritime Training Institute with its maritime and port related training and capacity development should be incorporated in the DRIVE project.

² In Annex 3 a list of required equipment is presented for the delivery of a set of STCW maritime training programmes.

international regional role in education and training in maritime, ports, transport and logistics in other countries along Lake Tanganyika. What MTI surely can do is to promote regional cooperation amongst the states along Lake Tanganyika in the field of safe navigation on the Lake.

The Ministry of Transport is engaged to find suitable buildings for hosting the Maritime Training Institute. Two venues nearby to the Port of Mpulungu have been identified, which would be very suitable for hosting the Maritime Training Institute where the training programmes in maritime and ports can be delivered.

Also facilities have been identified to host the vocational education and training in transport and logistics, which is situated between Mpulungu and Mbala. If those facilities can be purchased, the five-year operational plan can be finalized with the rent and maintenance of the facilities included in the budget.

Regional dimension of the Maritime Training Institute and cooperation amongst the countries along Lake Tanganyika

The Maritime Training Institute will take initiatives to involve other countries along Lake Tanganyika to participate in the training programmes, in particular those related with STCW training in the maritime domain.

The Maritime Training Institute may also promote, initiate and host regional meetings and conferences related with navigation on Lake Tanganyika and other relevant issues.



Port of Mpulungu



Port of Mpulungu

Maritime Skills Training for Public Institutions

A training programme on Maritime Operations and Occupational Health and Safety for public institutions was organized in Lusaka from January 27-29, 2020. The audience consisted of 21 representatives from different public institutions in Zambia such as the Ministry of Transport and Communications, the Ministry of Education, TEVETA, Port of Mpulungu, etc.

The training programme was meant to provide the tools for safe and secure maritime navigation and operations in compliance with international standards as stipulated by the IMO and the need to include it into the national legal and regulatory framework.

MARITIME SEMINAR - TRAINING PROGRAMME



Scheduled Week 5: Period 27 – 30 January 2020





PROGRAMME						
Starting date	27-01-2020	Hours 09.00 – 12.00,				
Final date	30-01-2020	13.00 – 14.00				
WEEK	MONTH	AM	SUBJECT	FACILITATOR	LOCATION	REMARKS
	JANUARY 2020	PM				
05	Monday 27 Jan 2020	AM	<ul style="list-style-type: none"> Introduction Objective of the Programme 	Ronalds Barry Kaambwa/ Patrick Kleinbooi		
			<ul style="list-style-type: none"> Origins to OHAS Role and Function of the United Nations 	Patrick Kleinbooi/ Malcolm Farre		
		PM	<ul style="list-style-type: none"> ILO and IMO Agencies Legislate, Promulgate Policies and Procedures 	Patrick Kleinbooi/ Malcolm Farre		


MARITIME SEMINAR - TRAINING PROGRAMME


	Tuesday 28 Jan 2020	AM	<ul style="list-style-type: none"> • OHAS in the Maritime Environment • Purpose of OHAS Systems 	Patrick Kleinboo/ Malcolm Farre		
		PM	<ul style="list-style-type: none"> • Role of Leadership of OHAS and Risk Assessment 	Patrick Kleinboo/ Malcolm Farre		
05	Wednesday 29 Jan 2020	AM	<ul style="list-style-type: none"> • Duties and Function of Management supporting OHAS Systems • Role and Function of Designated Safety Officer 	Patrick Kleinboo/ Malcolm Farre		
		PM	<ul style="list-style-type: none"> • ILO and IMO Agencies Legislate, Promulgate Policies and Procedures 	Patrick Kleinboo/ Malcolm Farre		
	Thursday 30 Jan 2020	AM	<ul style="list-style-type: none"> • Roles, Functions and Duties of Safety Appointees and Workers in supporting the Safety Officer to administer and maintain an OHAS Systems 	Patrick Kleinboo/ Malcolm Farre		


Course materials provided to the participants



 ZAR - MERCHANT SHIPPING ACT 57 OF OCCUPATIONAL HEALTH AND SAFETY ACT 1993



 ZAR - MARITIME OHSAS.pdf



 CAN - MARITIME OHSAS.pdf



 ILO MANAGEMENT SYSTEMS.pdf



 MCA CODE OF SAFE WORKING PRACTICE



 OSHA - ROOT CAUSE ANALYSIS.pdf



 OSHA (2015) - GUIDELINES FOR INVESTIGATION OF ACCIDENTS.pdf


 UNC OHS - ACCIDENT REPORT A


 IMO STCW (MANILA (2010)).pdf


 IMO SOLAS (CONSOLIDATED (2011)).pdf


 IMO MARINE POLLUTION (2011).pdf


 PPT - NESTRA (OHS ZAMBIA).pdf

The core of the training course is a Power Point Presentation of 323 slides for the three-day programme. This training material is supplemented with relevant original official documents from IMO, ILO and the Government of South Africa.

Maritime Vocational Training on Port Operations

A vocational training programme on port operations, terminal management, breakbulk operations and container handling was organized in Mpulungu from January 27-29, 2020. The audience consisted of 25 representatives from different public and private institutions in Zambia such as the Port of Mpulungu, stevedoring companies, etc.

The training programme was meant to provide the tools for safe and secure port operations in compliance with international standards and best practices all over the world.

TRAINING PROGRAM

TERMINAL MANAGEMENT AND BREAKBULK OPERATIONS

Port of Mpulungu

January 27-29, 2020

Course objectives:

After completion of this course, trainees should be able to

- Differentiate breakbulk cargo from other maritime cargo
- Apply properly the basic slinging procedures during lifting operation
- Implement the best work practices in order to improve productivity and safety on the terminal
- Understand the advantages of containerization

Duration 3 days

Number of trainees: 12-16

Target group: All operation staff of a general cargo terminal

Course content

Introduction to the course

- Functional classification of maritime cargoes
- Examples of breakbulk cargo

Ships used for breakbulk transportation

Breakbulk lifting devices

- Ship-to-shore equipment
- Terminal equipment

Basic slinging procedures

Cargo handling

Planning and administration

Breakbulk operations: How to improve productivity

General working safety

Containers vs breakbulk

- Advantages
- Disadvantages

Methodology: Classroom lessons with business cases and group discussions.
Simulation game on how to improve productivity

The core of the training course is the Handbook on Cargo Operations Management produced by STC (113 p.) and 193 Power Point slides for the four-day programme, as well as a glossary of port and shipping terms. All this material has been handed over to the participants of the training programme.

Promotion of Regional Cooperation on Navigation on Lake Tanganyika

Action Plan based on a mission to Zambia, Burundi and DRC from September 23-October 3, 2019

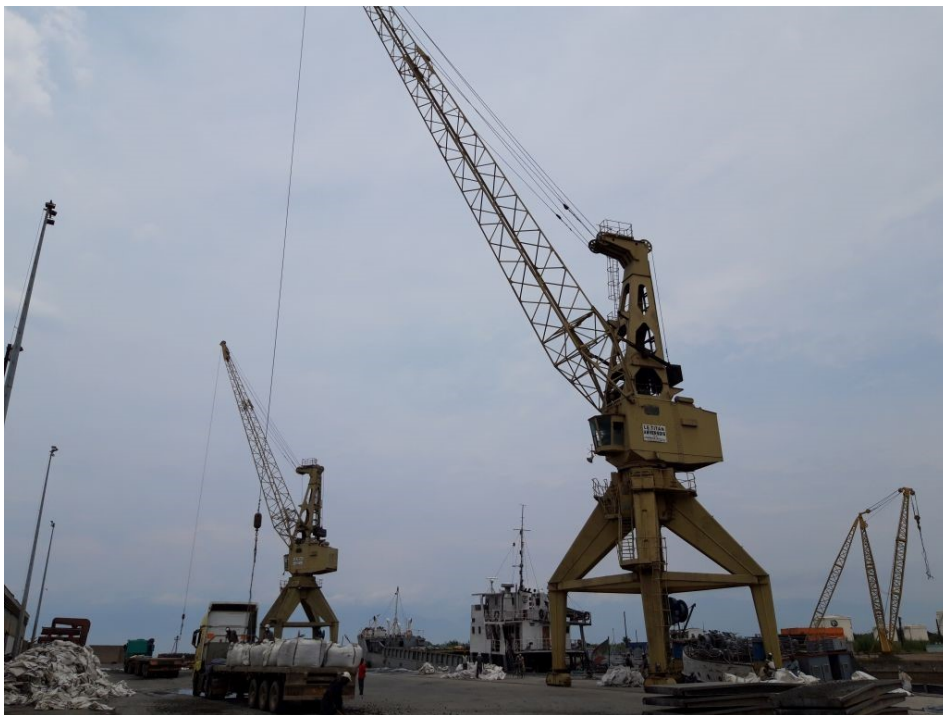
- A mission took place from September 23-29, 2019 to Zambia (Lusaka and Mpulungu) with a team composed by Nkruma Chamaluka, Patrick Kleinbooi (STC-SA), Guy Motchebe (STC-NESTRA) and René Meeuws (STC-NESTRA) within the framework of the RVO project to carry out a feasibility study to establish a Maritime Training Institute in Zambia.
- This same team carried out also a 2nd mission to Burundi and DRC from September 30-October 3, 2019 facilitated by the Netherlands Embassy in Burundi and TMEA (Trade Mark East Africa), the latter organized a visit to the Port of Kalundu in DRC.
- The composition of the team (from Zambia, Cameroon, South Africa and The Netherlands) was highly appreciated by the institutions, organisations and companies visited in both countries.
- The main objective of this mission to promote training and capacity development in the maritime and port domain along Lake Tanganyika.
- Lake Tanganyika Authority, based in Bujumbura, is interested in playing an active role in enlarging their mandate and include maritime navigation: setting international standards for navigation on Lake Tanganyika (according IMO regulations); facilitating training and capacity development in this respect; promote regional cooperation in the maritime domain. A workshop should be organized to formalize LTA's role that draws participation from all 4 countries around Lake Tanganyika.
- Both the public and the private sector in Burundi and DRC, in particular the Port of Kalundu in DRC, and the Port of Bujumbura in Burundi showed huge interest in training programmes for the port; the shipping lines showed interest in training and capacity development in maritime, transport, warehousing and logistics. It was also mentioned to the mission that capacity building should extend to staff and labourers working on Lake Kivu.
- The Minister of Transport of Burundi showed interest in playing a role in organizing a regional meeting to discuss regional cooperation in the maritime domain.
- It would be useful to give a follow-up on the Lake Tanganyika regional trade study by estimating the future port capacity needs (containers, break bulk, liquid bulk, etc.) along the lake; the total vessel capacity needs; optimization of the number of vessels, its



carrying capacity, routes and frequencies. This would provide a good business case for renewal of the vessel fleet and expansion of port capacity.



Port of Bujumbura



Port of Bujumbura



Port of Kalundu, DRC



Port of Kalundu, DRC

Conclusions and recommendations for the way forward

- The concept of establishing a Maritime Training Institute (MTI) in Zambia is feasible and is being endorsed by both the public and the private sector. The Ministry of Transport and Communications will play a leading role in the legal establishment of the MTI in close cooperation with the Mpulungu Harbour Corporation and the private sector.
- The Maritime Training Institute will consist of three pillars: 1) education and training in maritime navigation; 2) training in port management and port operations (measurement, monitoring, registration and analysis of port performance; design and implementation of loading and off-loading plans; safety and security in port operations; management and operation of port equipment); 3) vocational training for youngsters in relevant crafts and skills.
- The costs are estimated at 5 million euro for initial investments (1.5 million euro for refurbishment of existing buildings, equipment, furniture, etc.) and five years of operations (3.5 million euro).
- It is recommended that the Zambian authorities express to donors that the establishment of the Maritime Training Institute and its operations is considered top priority in the series of investments foreseen for the rehabilitation and expansion of the Port of Mpulungu. Impressive improvement of port performance can already be realized by tailor-made training and capacity development.
- The STC Group in The Netherlands, including STC-NESTRA, STC International and STC-SA, is committed to provide continuous support to this process and will also looking for funds to make the operations of the MTI sustainable in the long run. One option is funding through NUFFIC focusing on strengthening Dutch and Zambian institutions in the field of maritime and port education.
- The Zambian authorities expressed the need to learn from the experiences of STC-SA Southern Africa and SAMSA to set-up, manage and operate a Maritime Training Institute and a Maritime Administration.



Annex 1 Report on Maritime Training in Lusaka, Zambia

REPORT FOR STC-NESTRA ON THE OCCUPATIONAL HEALTH AND SAFETY IN THE MARITIME ENVIRONMENT & ESTABLISHMENT OF A MARITIME TRANSPORT LOGISTICS AND VOCATIONAL TRAINING SCHOOL SEMINAR TRAINING WITH THE ZAMBIAN DEPARTMENT OF TRANSPORT IN LUSAKA, ZAMBIA OVER THE PERIOD 27 TO 31 JANUARY 2020

- Appendix A. Seminar Feedback Forms
 B. Attendance Register/Contact Register

INTRODUCTION

The STC-Southern Africa was tasked to, on the behalf of the STC-NESTRA, present a seminar on the subject ‘Occupational Health and Safety in the Maritime Environment’ (OHS) and the establishment of a Maritime, Vocational, Transport and Logistics Training School in the Port of Mpulungu.

The seminar itself was presented over the period from Monday 27 January to Wednesday 29 January 2020 at the Conference Room of the ZICTA (Zambian Information Communication Telecommunications Authority), Lusaka, Zambia. On Friday 31 January 2020 the STC Team met with the Transport Ministry Office personnel to engage in discussions with regards to feedback of the training week in Lusaka and Port of Mpulungu including the strategic approach as to the future phases of the remaining Project.

AIM

To report on the activities encompassing the seminar training sessions and meetings conducted in Zambia, Lusaka and the Port of Mpulungu respectively.

SCOPE

The report addresses the training factors for the support and development of delegation nominated by the Transport Ministerial office and Stakeholders scheduled over the period 27 to 31 January 2020.

TIME AND SPACE

Seminar. The seminar was scheduled as follows:

- Venue. ZICTA Conference Centre, Lusaka, Zambia
- Dates. 27 to 29 January 2020, with 30 January 2020 a spare day for report writing.

Strategic and Feedback Meeting:

- Venue. Southern Sun Ridgeway Hotel, Lusaka, Zambia
- Date. 31 January 2020

LOGISTICS

STC TEAM

- Mr R. Meeuws, Mr P.M Kleinbooi and Mr M.J. Farre.

Transport.

- Air Travel. Return air travel between RSA and Zambia.
- Local Travel. In Zambia transfer between the airport and the hotel by means of a taxi.
- Transport. The Zambian government arranged transport for the STC delegates between the hotel and the ZICTA seminar facility.

Accommodation. STC-NESTRA arranged accommodation at the Southern Sun Ridgeway hotel, Lusaka, Zambia.

THE SEMINAR

PREPARATION PHASE

STC-SA prepared the presentations for the training seminar in Lusaka and the timeframe of thirteen (13) days allocated for preparation was sufficient.

SEMINAR PHASE

The seminar training phase was initially planned for four (4) days, however the local delegates could only receive approval for three (3) days out of office to attend. The Occupational Health and Safety seminar ended on the second day in support of a Zambian request to commence an engagement with regards to the strategic establishing and the proposed implementation phase of the maritime training. Final feedback sessions on training conducted and talks supporting the next phase of the project were entered into on Friday 31 January 2020.

Monday 27 January 2020. The seminar training started at 11:00 with introductory speeches by the delegates present. The presentation of the occupational health and safety within maritime operations were conducted by Mr Farre. The 1st day seminar training completed by 13:15.

Tuesday 28 January 2020. The Tuesday morning session started at 08:30, a practical exercise into the Tuesday's programme were conducted. The delegates had no prior maritime experience or exposure, yet the candidates were proficient within their separate group engagements. Group representatives were selected to present their different case scenarios and good participation was observed.

During lunch a discussion with the Deputy Director, Zambian Ministry of Transport came about a request to commence the Wednesday morning session with direct approach to IMO Convention, the STCW Regulations related to the strategic application and policy writing for the establishment of a maritime training and logistics transport school.

For this reason, after a discussion with STC Nestra it was decided to start the second (2nd) day with the 2nd presentation on Wednesday morning.

Wednesday 29 January 2020. The seminar training commenced with a presentation of Maritime Governance, the Maritime Authority link into the training sector, to proceed towards the implementation of maritime training facilities, equipment and course material requirements aligned with international standards. Conducted by Mr P Kleinbooi, who outlined the legislative processes, highlighting the strategic and policy writing implementation.

It became apparent that the delegates representing national education Ministry was not familiar with the process in terms of the IMO Convention and STCW Regulations, the mandate procedures of statutory oversight as an IMO member state for the establishment of a maritime authority. These discussions led to a lively interaction between the delegates, and the example

of the Zambian Civil Aviation had to be shared in terms of compliance with international IAATA regulations in relation to the IMO Convention.

During this discussion it became evident that the Zambian delegates started to glimpse the enormity of effort that was going to be required, but also the economic potential and benefits, of the phases ahead for the establishment of a Maritime Authority and sector school.

During the discussions, the following items were highlighted:

- The Zambian delegation requested clarification with regards to the final end product of the proposed school and therefore the STC-SA Maritime Training Centre in RSA was showcased with all its resources and requirements. The presentation showcased the required facilities linked to the practical and theoretical delivery of the programmes, ie. the swimming pool or fire-fighting simulator is a direct built fit for purpose highlighting the importance of compliance of both IMO as the international standards. Further to this the training facility, equipment and material similar to the importance of the IMO Model Course curriculum with examinations, assessments and audits within the concept of international standards were also highlighted.
- The concept seems to have been well understood and accepted, until recognition settled that the IMO STCW Regulations were an illustration of international standards and best practices within the maritime sector.
- It was evident that the Zambian drivers of the project were sensitized on the lengthy legislative processes that were going to take place and the design and submission of the required policies to the Zambian authorities is imperative for the legitimise establishment of a maritime safety authority and the maritime training processes to obtain IMO status.
- A proposed structure as a recommendation of how the Maritime Directorate with a Maritime Safety Authority with its sub-divisions needed to be established within the Ministry of Transport was presented. From the subsequent Zambian requests for assistance with these processes, it was evident that the scope of the preparatory work finally dawned on the Zambian delegation. The presentation continued to highlight clarity on various internal and national structures, their mandates, roles, responsibilities within their functions including how each authority will have to commit to contributed towards the common goal.
- Mr Barry Kaambwa requested some clarification as to how the link between the vocational studies would play a role of articulation in the further development of a candidate who intend to train across to maritime. The career prospects would enable an extension of scope and create employment opportunities within the maritime sector.
- At this juncture a lengthy discussion as to the separation of powers and qualifications ensued. It is evident that the Department of Education was of the opinion that the function of issuing of qualifications would remain within the national education domain. An example of the training of aircraft pilots and crew in the aviation sector and maritime were made and explaining the many similar implementations between the two sectors had with unique opportunities which have their own regulatory body of authority.

- The process of accreditation and/or qualifications were presented explaining the different phases required between education and training link to sea-service to enable qualification issued by the Authority Registra as the process owner.
- Concerns were expressed about sourcing and funding for internships/onboard training for prospective maritime students commencing with their sea-service onboard. The concern was raised as to what business model would be applicable to ensure a sustainable financial term for the school. In order to clarify this concern, it was required to use the STC-SA Maritime Training Centre methodology, using the IMO requirement of 'mandatory' courses in detail, and that students need to return every 5 years for the re-validation of their certification.
- It was suggested that for the initial students the Zambian government should consider assisting maritime students to support with onboard placements and sea-service linked with a stipend funding during onboard training.
- The Zambian delegation requested information on some of the challenges that STC-SA faced on establishment. The presentation not only highlighted the challenges faced, but also educated the required time and commitment it took to turn the Maritime Training Centre into a sustainable enterprise in the face of existing competition. These efforts included selecting a viable geographical location, locating the facility close to both public transport routes and industry (the client), the philosophy of "centralised training under one roof". In this regard STC-SA benefitted in that all practical training is conducted as a one-stop-shop training venue.
- The different maritime career paths for officers and ratings were explained, and the numerous job opportunities that are offered by the maritime industry, and how it fits into the Basic Safety Training regime.

Note. In the discussions it was evident that many of the delegates processed the information as "Zambia only". Once they started realising the potential of international employment and the potential economic benefits it could plough back into the Zambian economy, a definite mind-shift started manifesting.

The day's activities concluded, and the delegates were requested to meet on Friday 31 January at 10:00 at the Southern Sun Ridgeway hotel for more formal discussions.

Friday 31 January 2020. Mr R. Meeuws chaired the last day's meeting. The format was an "open agenda", with feedback from the respective training locations and then allowing the Zambian delegation to table items of concern and interest.

The need to establish training facilities in the Port of Mpulungu was discussed, including possibilities of migrating the vocational and maritime training located in a synergetic partnership at the same premises. The Zambian delegation would go back and explore the funding options for support for infrastructure development for the renovations required to the current state of the facilities identified close to the port of Mpulungu. This site was identified as the suitable venue for the establishment of the Maritime Training Centre. This project

included an industrial development plan with the aim of bringing additional maritime port terminal and logistics trades into the school.

Mr Guy Motchebe feedback report highlighted the following challenges within the Port:

- i. unsafe occupation health and safety manual labour practises;
- ii. lack of port security and safety regulations;
- iii. during adverse weather all cargo work is interrupted;
- iv. lack of information of vessel departures and arrivals; and the
- v. lack of information on what type of cargo loaded on arriving vessels (this meant that cargo unloading and loading preparations is ad hoc and only start when the vessel finally comes alongside.)

As a result, port efficiency suffered.

During discussions it was highlighted that the future identification as part of the project could be in support to rectify the critical communication deficiencies that directly impact upon port efficiency:

- i. the need to establish a regional ship-to-shore communications network;
- ii. the need for a regional ship-to-shore communications network;
- iii. the need for a ship-to-ship communications network that will encompass Lake Tanganyika; and
- iv. the need for a comprehensive operational and logistic analysis of the port and its activities.

The Zambian delegates emphasised that they desire that all training and training material was from the outset fully accredited by the IMO. Mr R. Meeuws and Mr P. Kleinbooi committed that the STC-Southern Africa would assist the Zambian maritime training in the following programmes:

- i. the initial (mandatory) training programmes;
- ii. support a train-the-trainer programme; and
- iii. port and terminal operator training programmes.

To assist the designated Zambian maritime authorities Mr Meeuws requested that STC-Southern Africa calculated a proposed budget to establish the Maritime Training Centre in terms of resources, and training aids.

Mr Meeuws requested the Zambian delegation to approach the Lake Tanganyika Authority to include the item of 'Navigation' in its mandate towards assisting the region achieving these aims.

Finally, the Zambian delegation requested if a select number of maximum five (5) persons could visit conduct an on-site visit to the STC-Southern Africa and the SAMSA offices in Cape Town. Mr Meeuws expressed the opinion that the necessary finances could be arranged, whilst Mr Kleinbooi confirmed that STC-Southern Africa would require a formal Letter of Invitation to support the Zambian Min of Transport in the set-up of a maritime institution.

FEEDBACK

Prior to final departure each delegate completed an evaluation form, recording their impressions, expectations and disappointments of both the facilitator, content and seminar. The individual feedback forms are attached to this report at Appendix A.

ATTENDANCE REGISTER

The attendance register is attached as Appendix B.

COMPLAINTS

During the seminar no complaints were raised, that we, the STC-NESTRA representatives, were aware of.

LESSONS LEARNED

The following lessons were learned from the seminar:

- The desired seminar objectives and outcomes are to be clearly communicated. By day two it was evident that the Zambian delegates had a different more 'structure orientated' expectation.
- The availability of company corporate material to middle and high-level delegates goes a long way to establish goodwill. In this case the availability thereof created a professional image for STC-NESTRA.

CONCLUSION

The seminar "*Occupational Health and Safety in the Maritime Environment*" was presented from the 27 - 29 January 2020 to delegates of the Zambian Department of Transport. Both the scope and the content were sufficient.

Whilst participation and interaction on the first day was reserved, from the second day as the delegates became more familiar with the seminar content, they started to respond and ask probing questions, often seeking the practical link between the seminar theory and the challenges they faced in the work environment.

Feedback from the delegates were positive and it is evident that for this group the level of information and the structure of the seminar itself was just right.

(M.J. FARRE)

February 2020

SEMINAR FACILITATOR

(P. KLEINBOOI)

February 2020

STC-SA DEPUTY DIRECTOR

ATTENDANCE LIST ON THE INCEPTION TRAINING WORKSHOP ON THE ESTABLISHMENT OF A MARITIME TRAINING SCHOOL ON DAY 1: 27/01/2020

NO	NAMES	POSITION	MOBILE NUMBER	EMAIL ADDRESS	NAME OF COMPANY
1	ZIZWANI PHIRI	DIRECTOR MIWD MTC	0977743866	zizwani.phiri@mtc.gov.zm	MTC
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3	CHILUBA KABELI	P/O	0977872385	chiluba.kabeli@gmail.com	MoGE
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5	Kelvin Singinza	Economist	0977974577	Kelvin.Singinza@gmail.com	MCTI
6.	Chama Mwale	Economist	0976877795	Chama.Mwale@mti.gov.zm	MCTI
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ATTENDANCE LIST ON THE INCEPTION TRAINING WORKSHOP ON THE ESTABLISHMENT OF A MARITIME TRAINING SCHOOL ON DAY 2: 28/01/2020

NO	NAMES	POSITION	MOBILE NUMBER	EMAIL ADDRESS	NAME OF COMPANY
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14	Malcolm Fare	STC facilitator	082 419 3277	mjfare2005@yahoo.com	STC

ATTENDANCE LIST ON THE INCEPTION TRAINING WORKSHOP ON THE ESTABLISHMENT OF A MARITIME TRAINING SCHOOL ON DAY 3: 29/01/2020

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• 7	SWEIVEN MICHELO	MARINE OFFICER POLICE HQS	0971979680	Sweiven1972@gmail.com	

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Seminar Training: Occupational Health and Safety in Maritime Operations and the establishment of a Maritime Transport and Logistics School

Date: 27 - 31 January 2020

Venue: Lusaka, Zambia

Facilitators: Patrick Kleinbooij
Malcolm J. Farre

EVALUATION

1. The process of Quality Assurance includes the evaluation of the seminar from the participant's perspective.
2. This questionnaire is part of the process of Quality Assurance, and serve the purpose to in future provide an improved and better seminar that had kept pace with the developments in this sector of industry.
3. This is a consolidated report of the seminar based on the participant's feedback.

INSTRUCTIONS

Rate both the facilitator and the seminar subject matter using the following measurement criteria:

Unacceptable = 1 Poor = 2 Average = 3 Good = 4 Excellent = 5

FACILITATOR						
Mark appropriate block with an X						
		1	2	3	4	5
1	Did the facilitator explain the outcomes of the presentation?	0	1	3	8	5
2	Was the presentation well organised?	0	0	2	8	7
3	Was the atmosphere favourable for communication?	0	0	0	5	12
4	Did the facilitator motivate and encourage discussion in the group?	0	0	1	6	10
5	Did the facilitator use activities and case studies during the programme?	0	0	1	8	8
6	Did the facilitator have sound knowledge pertaining to the subject?	0	0	0	4	13

SEMINAR CONTENT						
Mark appropriate block with an X						
		1	2	3	4	5
1	Was the content arranged in a logical manner?	0	1	3	8	5
2	Was the content relevant?	0	0	1	6	10
3	Was there enough time for discussion during the programme?	0	1	3	5	8
4	Duration of the Course? (1 = too short / 5 = too long)	3	0	7	3	4

SEMINAR ASSESSMENT		
	YES	NO

1	Did you learn anything?	16	1
2	Would you recommend the seminar to anyone?	16	1
3	Was the seminar interesting?	16	1
4	Did the seminar meet your expectations?	14	3

CONSOLIDATED FEEDBACK COMMENTS

1. The title of the seminar was debut as the processes around the establishing of maritime transport and logistics school and occupational health and safety in maritime operations.
2. The seminar was informative and included a feedback session with a road map ahead. The regulatory framework to operationalize a maritime school still needs to be established.
3. The seminar was very well organised and tailored to our maritime needs.
4. The information was very educational and delivered in a professional manner.
5. The content for day 3 was more of the strategic application of maritime training into the operational requirements of such a school.
6. The training methodology was excellent. Need to undertake a study tour on maritime institutions within landlocked countries.
7. Generally, the seminar was well organised and with the hope to increase the number of shareholders to attend the next sessions.



Annex 2 Report on Port Training in Mpulungu, Zambia

Terminal Operations Management

Breakbulk



Mpulungu Harbour Corporation LTD

January 2020

I – INTRODUCTION

As part of the project to establish a Maritime Training Institute (MTI) in the Port of Mpulungu, a pilot training session was carried out by STC-NESTRA in Mpulungu from January 27 to 29, 2020 with the theme “Breakbulk operations management”.

This 3 days training session brought together 25 participants mainly port operation staff.

Upon completion of the course, participants were able to:

1. Differentiate breakbulk cargo from other maritime cargoes
2. Apply properly the basic slinging procedures during lifting operation
3. Implement the best work practices in order to improve productivity and safety on the terminal
4. Explain the advantages of containerization



Opening words of the District Commissioner

II – TRAINING AGENDA

Timing	DAY 1	DAY 2	DAY 3
08.30 am – 09.00 am	Breakfast	Breakfast	Breakfast
09.00 am – 09.30 am	Introduction to the course/Opening speech	Basic slinging practices	Planning and administration –Bill of lading/Cargo list/Cargo plan –Measuring cargo handled
09.30 am – 10.30 am	Basic terminology used in port operations		
10.30 am – 10.45 am	Tea Break	Tea Break	Tea Break
10.45 am – 12.00 am	-Functional classification of maritime cargoes –Examples of breakbulk cargo - Ships used for breakbulk transportation	Safety and breakbulk handling -Working directly with cargo: Manual handling –Working with forklift inside the ship –Handling cargo in the rain	From break bulk to containers
12.00 am – 01.00 pm	Launch break	Launch break	Launch break
01.00 pm – 02.30 pm	Breakbulk lifting devices- Wire ropes and chains, Synthetic slings, spreader bars, special hooking devices, spreaders...	Cargo handling –Yard preparation –Quay transfer –Hooking cargo at the quay site and lift it onboard	Simulation game about receiving breakbulk cargo on the yard and loading in the hold of a ro-ro vessel
02.30 pm – 02.45 pm	Tea break	Tea break	Tea break
02.45 pm – 04.00 pm	-Ship-to-shore equipment- Shore based and vessel based - Terminal equipment – Tug Master, Forklift, Reach stacker, Cranes, pick and carry cranes	Cargo handling - Stowing/Removing the cargo in the holds –Delivery cargo on external transport –Cargo preservation	Evaluation of the course Handover of certificates



Family picture after the graduation ceremony



III – PEDAGOGICAL APPROACH

The lesson was a mixed up of brainstorming activities, exposes, questions and answers discussions. The simulation game organized the third day provided the students with the opportunity to show or demonstrate their ability to plan properly the reception of breakbulk cargo on the yard and efficient loading onboard the vessel. Actually, the course was very interactive.



Students receiving cargo on the yard and loading onboard the vessel hold

III – EVALUATION OF THE TRAINING SESSION

Based on the form below, 23 participants were able to evaluate various aspects of the training session including: the training program and materials, the training conditions, and the lecturer. The results are presented below.

► Training, program and materials

The training met my expectations.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
			12	11

I will be able to apply the knowledge learned.

			10	13
--	--	--	----	----

The training objectives for each topic were identified and followed.

			11	12
--	--	--	----	----

The content was organized and easy to follow.

			9	14
--	--	--	---	----

The materials distributed were pertinent and useful.

			10	13
--	--	--	----	----

How was the duration of the course?

Too short 13	OK 10	Too long
-----------------	----------	----------

How do you rate the training overall? average

(1-10) **8,51**

► Training conditions

Room size, equipment, environment met my expectations

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	2	5	5	11

Lunch, snacks and dinner met my expectations

	2	3	10	8
--	---	---	----	---

Travel distance to the training location was OK

1	5	5	6	6
---	---	---	---	---

How do you rate the location overall?

7,04

► **Lecturer**

The lecturer was knowledgeable

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
				23

The quality of instruction was good.

			4	19
--	--	--	---	----

The lecturer met the training objectives.

			8	15
--	--	--	---	----

Class participation and interaction were encouraged.

			11	12
--	--	--	----	----

Adequate time was provided for questions and discussion.

		1	8	14
--	--	---	---	----

How do you rate the lecturer ->

(1-10) **9,39**

Suggestions from the students

- The training venue needs to be improved. The roof was leaking during the training session. If possible, training may be organized out of the port premises to avoid disturbances and prevent trainees from moving in and out.
- Training period should be extended to 5 days

IV – APPRAISAL OF THE FACILITATOR

The organization of the workshop was satisfactory as evidenced by feedback from trainees.

Tea breaks and lunch breaks were taken on time. The quality of the food was appreciable.



We noticed a great interest and full commitment of participants. They were all present every day and most of them on time. They greatly appreciated the training and especially the materials they received on USB sticks.



We expected not more than 15 participants, but we had finally 25 in the classroom!




We will like to extend our thanks to the Mpulungu Harbour for their involvement in the organization of this workshop.

At the educational level, we have the strong feeling that we achieved the training objectives.

V – OBSERVATIONS AND RECOMMENDATIONS

Areas		Observations	Recommandations
Safety and Security		<p>Barely all the longshore workers working without PPEs</p> 	<p>PPEs should be provided for all operational staff.</p>
Gates	<p>Inefficient gate procedures. Queue of waiting trucks at the gate</p> 		<p>Everything in terms of documentation and delivery orders should be arranged out of the port premises. Trucks must approach the port to gate-in only by appointment</p>
	<p>Poor access procedures for pedestrians and small vehicles. We could access every day without any check at the gate</p>		<p>Port access cards should be arranged for all port workers. Only authorized people should be allowed to gate in.</p>
	<p>Many pedestrians and visitors on the yard</p>		<p>Pedestrians and visitors are not allowed to work around the yard. Trucks drivers must remain in their cabin.</p>

Operations		Longshoremens sharing stolen goods (torn bags of cement) on the yard	Disciplinary measures must be taken against anyone caught with stolen goods on the yard. Random checks must be done on all personnel when exiting the terminal
	Yard	<p>Yard looks like a parking area. Even a washing point for some trucks. Some trucks stay 2 days or probably more on the yard which is unacceptable.</p> 	<p>Trucks may be allowed to exit only when they are expected. Trucks need to be loaded or unloaded as soon as they enter the yard in order to improve the truck turnaround time.</p> <p>Housekeeping must be done on the yard when no vessel operation is ongoing.</p> <p>No truck should be allowed to spend the night at the terminal.</p>
			<p>The port owns detachable trailers, but is not using them to the full.</p> 
		<p>Many people at the quay side during vessel operations. Poor supervision</p>	<p>Vessel operations should be properly supervised. Unauthorized persons are not allowed to visit the operational area</p>

	<p>Vessel</p>		
		<p>At this moment, a maximum of 6 bags only can be loaded at the same time.</p> 	<p>A spreader bar may be added for more bags to be loaded at the same time, thus shortening the vessel turnaround time</p> 
		<p>The port is now working at best from 07.00 am to 10.00 pm. No night shift. This situation significantly increases port stay of the vessel and is damageable for the vessel turnaround time.</p>	<p>There is an urgent need to review staff organization for vessel operations to run 24h/24h at least as long as there are vessels alongside.</p>
		<p>No vessel operations when raining. Hatches are closed and reopened only after rain.</p>	<p>Tents can be used to cover the hold during rain to avoid closing the hatches when it starts raining and opening them again after rain, which can be time consuming. A hatch tent is suspended from the crane or derrick runner wire, and secured around the circumference of the hatch.</p>
		<p>Goods like cement are still loaded in the vessel hold in small bags of 50kg, making the loading process very slow.</p>	<p>It is better to have cement on pallets and handle the trucks with forklift rather than man labor which is very slow and dangerous, then load the vessel with a spreader bar. This will significantly improve the loading process by reducing the downtime of trucks and vessel</p>




Tearing big back of cement in the hold in order to fill the space in between the bags.



People working in the hatch to fill combings

It is better to load big bags rather than bulk.
It is strictly forbidden to go under a suspended load

For holds with combings, forklift should be preferred in the hold for handling.

			
	<p>Planning</p>	<p>There is little or no communication with the ports of origin of the vessel or with the vessel.</p> <p>No cargo list nor cargo plan available before arrival of the vessel</p>	<p>Efficient communication needs to be established with the different ports or origin of vessels. So that as soon as the vessel leaves from the port of origin, Mpulungu port is informed and may start preparing for the vessel arrival. A forecast of the berth allocation must be available at all time for at least one week period of time</p>
		<p>There is actually nothing happening until the vessel is alongside</p>	<p>Once information about ETA is available, preparation for vessel operations should start. If possible, cargo to be loaded should already be transferred to the quay site so as to cut down the travelling time when loading operations start.</p>
		<p>Crane drivers doing nothing when no vessel alongside.</p>	<p>It is possible to optimize the use of crane operators by promoting to that function only those who are able to drive all the other machines (tractors, forklift, reach stacker...)</p> <p>A good policy would be to recruit operators only at the entry level as truck drivers or forklift drivers. From there, they can be promoted to reach stackers and later on to the crane.</p> <p>In this way, the drivers are multi functional, and there is always a chance to find something to do for each one of them especially when there is no vessel alongside.</p> <p>It also gives young operators a chance to grow in the company which can be a great source of motivation</p>

In general, it is important for the port to have a good scan of all operational processes with the aim of detecting all the weak points where improvement is needed.

Thereafter, Standard Operating Procedures (SOP) need to be elaborated and their implementation enforced.

STC-NESTRA may assist in writing down SOPs and have them implemented in the port.

From our point of view, great improvement can be achieved should the port handle containerized cargo. The ship to shore crane now available has the capacity to handle containers even with the very chains used to handle big bags. High productivity can be achieved by attaching to the crane a telescopic spreader.

Fortunately, many vessels now calling at the port are actually barges able to carry containers.



Container shipping offers a significant advantage as it streamlines the shipping process.

Cranes easily lift containers on and off a ship at fast speeds. Turnover time in port is greatly reduced. Other advantages include:

- More efficient (un) loading
- Less securing time/ costs

- More protection against damage and pilferage
- More protection against weather influence
- More organized storage at terminals
- More vertical stacking of goods
- Standard dimensions and securing points
- Storage of goods before purchase
- Transport cost reduction
- Insurance cost reduction
- Handling cost reduction
- Suitable for road, rail, inland water and sea transport

If goods are shipped from Mpulungu to Bujumbura via containers, the only big challenge will be to find in Bujumbura return cargo for empty containers. Reverse logistics is indeed important to optimize the process and achieve significant transport cost reduction.

It is possible that if imported from Burundi, many consumer goods (drinks, soap, oil....) now coming from Lusaka becomes cheaper in Mpulungu.

We strongly advise the port to lobby in order to drive the other stakeholders (shippers and shipping lines) toward this direction.

VI – ANNEXURE

List of participants

N°	Names
1	CHOLA Blackson Musonda
2	NAYAME Dorica Moyo
3	CHISULO Ian Chuzya
4	CHARLES Lukonde
5	Patrick M. SILWAMBA
6	Kennedy SILWAMBA
7	Samuel NWIMANZI
8	Chitambo MUSONDA
9	Gilbert TEMBO
10	Golifer LUMBWE
11	KAPATA Remmy
12	KABWE Andrew
13	Anglish SIKAZWE
14	Victor SIKAZWE
15	MUSOBELA Humphrey
16	SIMUYEMBA Joseph
17	John KYOMBELA
18	CHAMA Kauseni
19	Arnold SIMUKOKO
20	MUTALE Bwalya
21	Dunstan KANGWA
22	Brian MAKONDO
23	Ernest CHALWE
24	Michael SIKAZWE
25	Kabunda KATOWA

Proposals for port and vocational training by the participants of the Port Training

Port

- Port management
- Safety management
- Warehousing management
- IMDG
- Logistics management
- Clearing-forwarding
- Purchasing-supply
- Maintenance management
- Equipment

Vocational

- Metal fabrication
- Cooks
- Electricians
- Mechanics/fitting
- Carpentry
- Machinist
- Tourism



Annex 3 List of necessary STCW training equipment Mpulungu

This Annex presents the equipment needed for the setting up of a Maritime Training Institute in Mpulungu, Zambia in order to be compliant with the requirements of the STCW Convention, as amended to be able to facilitate the following short courses;

- Personal Safety and Social Responsibility;
- Personal Survival Techniques;
- Fire Prevention and Fire Fighting;
- Elementary First Aid;
- Competency in Security Awareness;
- Crowd Management and Passenger Safety;
- Able Seafarer Deck; and
- Able Seafarer Engine.

Table 1 – Personal Safety and Social Responsibility

PERSONAL SAFETY AND SOCIAL RESPONSIBILITY	QTY	Price (ex VAT)
Code of Safe Working Practices	1	\$ 3 530,00
MARPOL Consolidated Edition	1	
STCW Code	1	
ISM Code	1	
SOLAS Training Manual	1	
IMDG Code	1	
Digital Alcohol Tester	1	
Multi-Drug Screen Kit	2	
Safety Goggles	12	
Hand Protection	12	
Safety Shoes	1	
Fall Protection	1	
Full Face Shield	1	
Ear Defenders	12	
Welding Apron	1	
Hard Hats	12	
Reflective Jacket	12	
Tool Bag and Bucket	1	
Grinder	1	
Drill	1	
Various	10	
Stage	1	
Bosuns Chair	1	
Jacobs Ladder	1	

Table 2 – Elementary First Aid

ELEMENTARY FIRST AID	QTY	Price (ex VAT)
PRACTI – MAN – CPR Manikin Adult Inc. Bag	2	\$ 9 710,00
CPR Mouth Pieces - Hi Care Red Adult/Child	100	
Gloves – Powder Free – Large 100	3	
Triangular Bandages - Hemmed	30	
Blanket	4	
Head Immobiliser – Universal (Blocks)	2	
Neck- Stifneck Adjustable – Adult	2	
Straps – Spider Harness – Buckle	2	
Automated External Defibrillator	2	
Trauma Board (Wood)	2	
Kramer Splints	8	
Neil Roberson Stretcher	1	
Wound Simulation Kit	1	
Bandages (Crepe 75 X 4.5)	24	
Splints Sam	6	
Pupil Torch	6	
Medical Glasses	12	
Regulation 7 First Aid Kit c/w Box	1	
Skeleton (Miniature)	1	
Drug Test	2	
Medical Charts	6	
Aluminium Scoop Stretcher	1	
Trauma Board (Aqua)	1	
Trauma Neck Brace	1	
Portable Oxygen Resuscitator	1	
Oropharyngeal airway	6	
Bag Valve Mast	1	
Space Blankets	3	
Ships Captain Medical Guide	1	

Table 3 – Personal Survival Techniques

PERSONAL SURVIVAL TECHNIQUES	QTY	Price (ex VAT)
Life Raft Complete	1	\$ 13 865,00
Life Raft Cradle Complete (Strops and Slips)	1	
Safety Plan	1	
Coverall (Boiler Suit)	12	
Life Jackets	12	
Immersion Suit	12	
Man Overboard Marker Light and Smoke (Dummy)	1	
Life Buoy, Bracket & Floating Line	2	
Life Buoy Lantern	1	
Muster List	2	
Line Throwing Apparatus	1	
EPIRB (Demonstration)	1	
Search and Rescue Transponder - SART (Demonstration)	1	
Thermal Protective Aids (In Life Raft)	1	
HRU's	1	
Life Raft Posters	2	
Pyrotechnique Posters	2	
Life Raft Instructions	2	
Dummy Hand Flare	1	
Dummy Rocket	1	
Dummy Smoke	1	
Dummy Rocket	1	
Dummy Pencil Flare	1	
Dummy VHF Radio	1	
Alluminium Clip Frames A3	6	
Alluminium Clip Frames A0	6	

Table 4 – Fire Prevention and Fire Fighting

FIRE PREVENTION AND FIRE FIGHTING	QTY	Price (ex VAT)
Fire Hydrants c/w Spanner	2	\$ 83 740,00
Fire Hoses (35 and 65mm)	4	
Fire Nozzles (Spray/Jet)	2	
Fire Suits (Jacket and Pants)	12	
Fire Helmet & Visor	12	
Fire Boots	12	
Gloves	12	
Anti Flash	12	
CABA Sets	4	
CABA Cylinders	8	
Smoke Machine & Liquid Smoke	1	
Branch Pipe	2	
Breeches	1	
Foam Generator	1	
Extinguisher Water (9 Lt)	3	
Extinguisher AFFF (9 Lt)	3	
Extinguisher CO2 (5 kg)	3	
Extinguisher DCP (9kg)	3	
Fire Axe	2	
Life Line (30m) & Waist Band	2	
Detectors (Flame/Smoke and Heat)	3	
BA Set Control Board	1	
Dummy for SAR	1	
Gas Cylinders	3	
Fire Boxes/Trays (Class A & B Fires)	2	
CPP 5inch 6.5 Hp	1	
Tank 2500 c/w fittings	1	
First Aid Box Reg 7	1	
Fire Blankets	2	
Hose Reels	2	
Signage and Posters	10	
Fire Wallet	1	
Fire Chart	1	
Fire Plan	1	
Sprinkler	1	
Foam (25l)	2	
Inductor	1	
Pick-up Hose	1	
PLB	1	
Coupling	1	
Display	1	
EEBD & Cylinder	1	
Torch	1	
Fire Fighting Training Manual	1	

Table 5 – Able Seafarer (Deck)

ABLE SEAFARER (DECK)	QTY	Price (ex VAT)
Steel Work bench	1	\$ 11 160,00
Block and Tackle	1	
Stage (Manufacture)	1	
Bosun's Chair	1	
Net Fishing	1	
Wire Splice Display Board	1	
Knot Display Board	1	
Harness	1	
Vice	1	
Pilot Ladder	1	
Spar for Rope Work	1	
Floats	3	
Life Ring	1	
Safety Shoes	1	
Gloves	1	
Goggles	1	
Ear Defenders	1	
Posters	1	
Inclinometer	1	
Shackles (150mm, 120mm, 100mm and 40mm)	1	
Eyebolts	1	
Line Throwing Apparatus	1	
Cargo Straps	1	
Securing Rachets	1	
Spring Clips	1	
Strops (Various) / slings	1	
Block and Lever Hoist	1	
Life Jackets	1	
Ropes (12mm) 20.6kg	1	
Ropes (16mm) 35.4kg	1	
Paint Brushes	1	
Fire Hoses	1	
Chain (40mm & 10mm)	1	
Wooden Mallet	1	
Seamanship Knives	1	
Marlin Spike	1	
Twine	1	
Lugless Joining Shackle	1	
Cable Hook	1	
Steel Wire Rope (2m)	1	
Bull Dog Grips	3	
Block	1	
Spring Hooks	1	
Bottle Screws	1	
Swivel tensioners	1	
Radar Reflector	1	
Stage (Manufacture)	1	
Bollard Manufacture	1	
Braided Polyprop (10mm) 10kg	1	
Braided Polyprop (14mm) 15 kg	1	
Braided Polyprop (20mm) 25.5 kg	1	
Anchor	1	
Compass (Gyro and Magnetic)	1	
Lifting Equipment	1	
Collision Regulations	1	
Oil and Garbage Record Book	1	
ISPS Code	1	

Table 6 – Able Seafarer (Engine)

ABLE SEAFARER (ENGINE)	QTY	Price (ex VAT)
Steel hexagonal workbenches with vices	4	\$ 24 160,00
Tool chests on wheels, including tools	6	
Reciprocating displacement pump	1	
Gear pump	1	
Rotary vane pump	1	
Screw displacement pump	1	
Centrifugal pump	1	
Reciprocating air driven pump	1	
Gland	1	
Mechanical Seal	1	
Drain Cock	1	
Globe valve	1	
Gate valve	1	
Relief valve	1	
Quick closing valve	1	
Change-over valve chest	1	
Mud box (strainer)	1	
Steam trap	1	
Display items	1	
Posters	1	

Table 7: Training Equipment cost per programme

Description	Unit Cost (ex VAT)
Personal Safety and Social Responsibility	\$ 3 530,00
Elementary First Aid	\$ 9 710,00
Personal Survival Techniques	\$ 13 865,00
Fire Prevention and Fire Fighting	\$ 83 740,00
Able Seafarer (Deck)	\$ 11 160,00
Able Seafarer (Engine)	\$ 24 160,00
Total	\$ 146 165,00

Note(s):

- The cost is in \$ (US Dollar) and any fluctuation of 5% needs to be revisited for financial validity.
- The costing excludes transportation from RSA to Mpulungu and any associated import taxes.

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