10-28-2023

Assessing Namibian dry ports: a stakeholders-centric evaluation in comparison to contemporary global standards

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WORLD MARITIME UNIVERSITY

ASSESSING NAMIBIAN DRY PORTS: A STAKEHOLDERS-CENTRIC EVALUATION IN COMPARISON TO CONTEMPORARY GLOBAL STANDARDS

PHILLEMON GABRIEL SHANINGWA MUPUPA

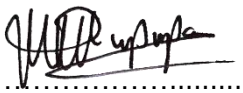
A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of Master of Science in Maritime Affairs

2023

Declaration

I certify that all the material in this dissertation that is not my own work has been identified and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.



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Acknowledgements

I would like to extend my heartfelt gratitude to all those who have been instrumental in my academic journey and the successful completion of my studies at World Maritime University.

First and foremost, I thank the Lord Almighty for His unwavering favour and guidance throughout this educational odyssey. His blessings have been my constant source of strength, enabling me to excel and providing me with the courage and wisdom to navigate the challenges I encountered.

I am deeply indebted to the International Maritime Organization for their generous sponsorship, which made it possible for me to pursue my studies at this esteemed institution. Their support has allowed me to expand my knowledge and skills in the maritime sector, an opportunity for which I will be forever grateful.

I am immensely grateful to Associate Professor Gang Chen, my supervisor, for his profound feedback and perceptive suggestions that have played a pivotal role in enhancing the quality and depth of my dissertation. I'd like to extend my sincere thanks to Professor Daniel Seong-Hyeok Moon, who leads the Port Management Specialization program. I would also like to acknowledge my peers in the Port Management specialization program, with whom I have shared memorable experiences. A special mention goes to Suraya Yeasmin Jui, Terminal Officer, Chittagong Port, Bangladesh, for her unwavering support during the challenging phases of my dissertation.

To my beloved family, particularly my wife, Linda Mupupa, and our children, I extend my heartfelt appreciation. Your unwavering support, prayers, and motivation sustained me during my time abroad as I pursued my studies in Sweden. Your sacrifices and understanding are the cornerstones of my success. I am also profoundly thankful to my parents and siblings for their steadfast support and encouragement throughout this journey. Your belief in me and your encouragement to maintain faith in the process have been instrumental in my achievements.

Elias Mwenyo, the Executive Commercial from Namport, played a pivotal role in inspiring me to embark on this academic endeavor. I am deeply grateful for his guidance and encouragement. I extend my sincere appreciation to Namport, my employer, for their immense support in granting me a 14-month leave to pursue my studies at the World Maritime University. Their understanding and investment in my growth are deeply appreciated.

My friends from The Connect have been more than just friends; they have been companions in this remarkable journey, and I cherish the unforgettable experiences we have shared. Lastly, I would like to acknowledge my friends in Namibia for their unwavering support, constant phone calls, and their presence when I needed them the most. Your friendship has been a source of strength and comfort.

To all those mentioned and to countless others who may not be named here but have played a part in my academic journey, thank you from the bottom of my heart. Your contributions have been invaluable, and I am deeply grateful for your presence in my life.

Abstract

Title of Dissertation: **Assessing Namibian Dry Ports: A Stakeholders-Centric Evaluation in Comparison to Contemporary Global Standards**

Degree: **Master of Science**

This dissertation explores the extent to which the Namibian dry ports adhere to international standards for logistics nodes classified as dry ports. Dry ports play a vital role in global supply chains, bridging the gap between seaports and inland regions. This study addresses the research question through a qualitative approach, examining the perspectives of key stakeholders in Namibia's transportation and logistics sector.

Data was collected from a diverse group of stakeholders, including public and private sector representatives. The findings from the identified elements used to asses dry port conformity to international standards, such as location, intermodal connectivity, container handling, logistics services, infrastructure, technology, trade facilitation, government support, and collaborations, revealed differences in stakeholder views.

While some considered the dry port location unfavourable, others found them suitable, reflecting the uniqueness of dry ports in Namibia. Intermodal connectivity was a subject of debate, with some emphasizing partial connectivity primarily via road and others recognised comprehensive connectivity involving both road and rail. Container handling and logistics services generally received positive feedback though areas for improvement were noted. Infrastructure and technology were seen as partially satisfactory with room for improvement. Government support was acknowledged, while collaboration with stakeholders was generally perceived as effective.

Namibian dry ports, situated within the Port of Walvis Bay, represent a deviation from the conventional global dry port model. These unique facilities are strategically positioned to maximize Namibia's geographical advantage, facilitating heightened cargo traffic, regional economic harmonization and bolstering Namibia's role as a formidable trade and logistics hub in Southern Africa.

This research thus offers valuable insights into the alignment of the Namibian dry ports with international standards. These findings inform policy decisions and strategies to enhance dry port operations in Namibia's logistics and trade landscape, highlighting the importance of aligning dry ports with international benchmarks for efficient global trade.

KEYWORDS: Namibian dry ports, Conventional Dry ports standards, Stakeholder perspectives

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List of Abbreviations

AUCN	:	African Union Cargo Namibia
CLOF	:	Container Liner Operators Forum
DRC	:	Democratic Republic of Congo
MOWT	:	Ministry of Works and Transport
NAMPORT	:	Namibian Port Authority
NAMRA	:	Namibia Revenue Agency
NDP4	:	National Development Plan 4
NHS	:	National Handling Services
NCT	:	New Container Terminal
PWB	:	Port of Walvis Bay
PPP	:	Public Private Partnership
RQ	:	Research Question
SADC	:	Southern African Development Community
TEU	:	Twenty Foot Equivalent Units
TKC	:	Trans Kalahari Corridor
WBNLDC	:	Walvis Bay Ndola-Lubumbashi Development Corridor
WBCG	:	Walvis Bay Corridor Group
WBPUA	:	Walvis Bay Port Users Association

Chapter 1

Introduction

1.1 Background of the Study

Seaport inland access has become a vital factor for the seaports' competitive advantage since container transport volumes continue to grow globally, triggered by the rapid development of international trade (Luo et al., 2022). As a result of this increased experience in global trade movements, the demand for transport services also increased (Hammad et al., 2022). To address this challenge, dry ports have been adopted to promote inland logistics or advance port-inland connectivity (Roso, 2008) and are the primary medium for raising the competitiveness of complex supply chains enabling these supply chains to remain cost-efficient, enhance environmental performances, and improves the quality of hinterland network connections (Jeevan et al., 2022). Therefore, improvements in supply chains should not be limited to the maritime part of the transport chain and seaport terminals but also to seaport inland access by means of intermodal terminals for the entire transportation chain to function (Roso & Lumsden, 2010). Such a node is thus essential to coastal and landlocked countries that ensures the flawless transport of cargo along the supply chain while safeguarding the integrity of the goods flow (Zain et al., 2022).

Namibia, situated along the southern West Coast of Africa, occupies a land space of approximately 824, 292 square kilometers and shares borders with Angola in the north, Zambia and Zimbabwe to the northeast, Botswana to the east, South Africa to the south, and Atlantic Ocean on the west, with a coastline stretching approximately 1572 kilometers. As a result of its location, Namibia has speedy and safe logistics routes that connect the world with the Southern African region, especially landlocked countries. Namibia's principal Port of Walvis Bay (PWB), is strategically located and supported by a network of well-maintained tarred roads that extend across Namibia into Angola, Botswana, South Africa, Zambia, Zimbabwe, and the Democratic Republic of the Congo (DRC). This gives Namibia

a huge potential to be an international logistics hub for the inland areas of the Southern African Development Community (SADC). However, the potential to become the preferred gateway for these landlocked countries is yet to be realized (JICA, 2015).

Upon Namibia's independence in 1990, the country was relatively isolated from the rest of the SADC Region, with only links to South Africa. However, shortly after independence, the Namibian government deployed concerted efforts to invest in road infrastructure to close the missing links to Botswana, Zambia, and Zimbabwe, and this gave rise to the Walvis Bay Corridors, a network of transport corridors linking the PWB to landlocked neighboring countries. In 1999 the Namibian government approved the Namibian Port Authority's (Namport) Regional Trade Plan, which resulted in the establishment of the Walvis Bay Corridor Group (WBCG), tasked with promoting the utilization of Namibia's transport corridors (Namibian Ports Authority, n.d.). The WBCG was established in 2000 as a service and facilitation center to promote imports and exports via the PWB for the SADC region (Namibia Trade Directory, n.d.).

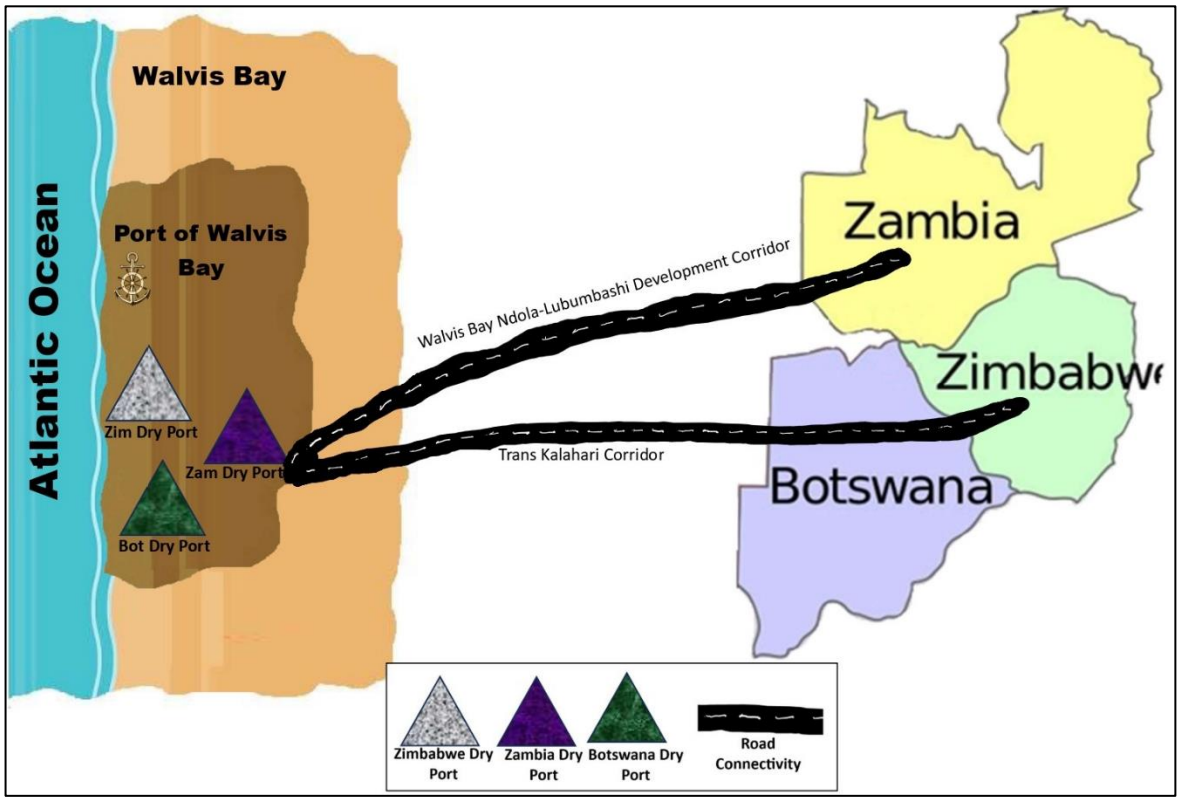
In accordance with Article 3.3 of the Protocol on Transport, Communications and Meteorology in the SADC, which advocated for the development of strategically located and commercially viable dry ports where appropriate (Protocol on Transport, Communications and Meteorology,1996), Namibia was the first to respond to this call in 2008 by awarding portions of land to Zambia, Zimbabwe, and Botswana at the port of Walvis Bay, for setting up dry ports in order to facilitate access for the said countries to international trade. The allocation of these portions of land was to enhance inter-regional trade and economic growth by providing the said landlocked countries with efficient transport links to the PWB.

The dry ports have since been developed and are fully operational, situated within the port's limits, and are less than 2 kilometers away from the PWB's New Container Terminal (NCT) and between 1500 - 2000 km from the said dry port recipient countries. These dry ports are connected to the Walvis Bay Corridors mainly by road, notably, the Walvis Bay Ndola Lubumbashi Development Corridor

(WBNLDC), which connects the PWB with Zambia and southern DRC, and the Trans Kalahari Corridor (TKC), which links with Botswana and Zimbabwe, are the two significant corridors that enable the transportation of cargoes to and from these countries. For these nations, the PWB is a key entry and exit point that gives them access to global markets via the Atlantic Ocean (Figure 1).

Figure 1

Dry port location and road connections to the recipient countries



Source: Developed by author

1.2 Problem statement

Namport manages two ports in Namibia which is the PWB, Namibia's main commercial port situated on the central west coast, and the Port of Lüderitz, situated in the south of Namibia. Namport has been tasked with managing, operating, and developing Namibia's ports on behalf of the Namibian government (Namibian Ports Authority, n.d.). In 2009 Namport, on behalf of the Namibian government, signed lease agreements with the Governments of Botswana, Zambia, and Zimbabwe for establishing dry ports at the PWB to facilitate these landlocked nations' access to international trade. However, these dry ports are uncommon as they are located within the limits of the PWB, whereas traditional dry ports are typically located within a certain distance from the seaport or inland. The lack of research on such dry ports and their compliance with dry port criteria is a significant gap.

This study therefore aims to uncover whether the dry ports located within the PWB can be accurately classified as dry ports. To achieve this aim, the following research questions were proposed. a) What are the functions and characteristics of dry ports according to existing literature? b) How do the dry ports located within the PWB compare with the established criteria for dry ports? This study used a qualitative method approach, focusing on document analysis and interviews to collect and analyze data from various stakeholders involved in the dry port operations.

1.3 Purpose of this study

This study sought to comprehensively investigate and analyze the unique dry ports as implemented within the PWB in Namibia. The investigation considered the unconventional nature of these dry ports, which are situated within the seaport limits, in contrast to traditional dry ports located inland or within a certain distance from the seaport.

This study's aim was to reveal the rationale for this unique dry port concept and whether the dry ports established at the PWB could be accurately classified as dry ports, as per the universally established criteria, which involved a thorough evaluation of their structural characteristics, functions, and operational procedures. Moreover, it also assessed the effectiveness of these unique dry ports in facilitating international trade, particularly for the recipient nations.

The study findings presented the true voice of the critical industry stakeholders from both the public and the private sector. This information provides the Namibian Government and Namport valuable insights on the viability of the dry ports and whether they meet the intended objective. This study may thus significantly contribute by addressing a novel and under-researched topic, providing insights into the applicability and effectiveness of these unconventional dry ports.

1.4 Research objectives

a. To examine the definition of dry ports and determine the key characteristics and functions universally recognized for designating a logistics node a dry port.
b. To analyze the level of consistency between the dry ports in Namibia and internationally recognized benchmarks and criteria for a logistics node to be categorized as a dry port.

1.5 Research questions

a. How a dry port is typically defined, and what key characteristics and functions are universally recognized as essential for designating a logistics node as a dry port?

b. To what extent does the Namibian Dry Ports meet or align with the internationally established benchmarks and criteria for a logistics node to be classified as a dry port?

1.6 Methodology

1.6.1 Research design

To achieve the study objectives, a qualitative research design approach was adopted to comprehensively investigate whether the dry ports established at the PWB are in alignment with internationally recognized benchmarks. A qualitative research design approach allows the researcher to explore the views of homogeneous as well as diverse groups of people to help unpack the diverging perspectives within a community (Choy, 2014).

1.6.2 Sources of Data – Key Informants

The primary sources of data for the investigation were the key players in the transport and logistics industry of Namibia, comprising multiple agencies from both the public and private sectors.

- Public sector: Ministry of Works and Transport (MOWT), Namibia Revenue Authority (NAMRA), Namport and WBCG.

- Private sector: Walvis Bay Port Users Association (WBPUA), Container Liner Operators Forum (CLOF), SEARAIL operator of the Botswana dry port, and National Handling Services (NHS) operator of the Zimbabwe dry port.

1.6.3 Selection of Key Informants

A representative sample of 8 key stakeholders was selected from the agencies identified above, represented by 1 participant. The selection of the participants was carried out through purposive sampling, which provided the researcher scope to select participants based on his own judgement that such participants possessed the capabilities of providing the information needed. Moreover, expert sampling was adopted, where the researcher selected participants possessing the necessary industry expertise to provide the required information.

1.6.4. Data Collection Procedures and Instruments

To answer the research questions, first, data (information) was sought by reviewing secondary data through document analysis of existing literature and publications on the topic, which included journal articles, case studies, reports, dissertations, and reviewing disclosures in official websites and governmental reports. Secondly, structured and semi-structured interviews were conducted, which served as the key data collection method via Microsoft TEAMS, whereby these discussions were recorded and stored safely and securely on a Google Drive created by the researcher. Lastly, the researcher developed transcripts from the recordings (raw data) for carrying out data analysis.

1.6.5. Data Analysis

Qualitative data analysis techniques were applied to the interview transcripts and the reviewed literature. Thematic analysis was applied to identify recurring patterns and themes within the interview transcripts, while content analysis was applied to organize and interpret the secondary data. Additionally, a comparative analysis approach was followed to juxtapose viewpoints and data sources to enhance the depth of the research findings and to form grounded conclusions.

1.7. Significance of the study

This study bridges a critical knowledge gap by evaluating the compliance of the Namibian dry ports with global standards. This contributes valuable insights to the logistics field, particularly in developing economies. Moreover, it offers policymakers, businesses, and academics a clearer understanding of how dry ports operate within the context of Namibia, which can serve as a reference point for similar regions worldwide.

1.8 Structure of the study

Chapter 1: provides an in-depth exploration of the background, problem statement, purpose, research objectives, research questions, methodology, and significance of the study, setting the stage for a comprehensive investigation into the alignment of Namibian dry ports with international benchmarks for logistics nodes.

Chapter 2: provides an overview of Namibia's transport and logistics infrastructure and the dry ports in Namibia situated at the PWB.

Chapter 3: presents a review of the available literature discussing the dry port definitions, its elements, dry port classification and categories, benefits, challenges, and where and how the dry port concept has been applied (Dry port implementations).

Chapter 4: describes the type of research methodology employed to conduct the research. The research design, data collection process and the analyses thereof are all outlined in this section.

Chapter 5: is the core part of this research, which reports on the findings of the data collected, followed by a comprehensive discussion of the findings, which aims to address Research Question 2.

Chapter 6: discusses the findings of the study, highlighting the unique challenges and notable achievements of Namibian dry ports within the context of the PWB and recommended areas for improvement to align more closely with international standards.

Chapter 7: This significant chapter consolidates the findings of the research. The research concludes with a comprehensive and strong final section that summarizes the contributions made, restates the aims of the study, and considers the wider implications of the findings.

Chapter 2:

Transport & Logistics Infrastructure and Dry Ports in Namibia

2.1 Overview of Namibia's transport and logistics infrastructure

Logistics is an elevated priority for many countries regardless of their level of economic development. This is because facilitating trade and transport is at the core of stimulating economic development. Well-functioning domestic and international logistics is a precondition of national competitiveness (Simasiku & Jackie, 2018). Hinterland transport connecting seaports are essential in the overall transport and logistics chain and port efficiency helps improve the overall efficiency of transport infrastructure. Of the 55 countries in Africa, 16 are landlocked, and landlocked countries rely on their neighbours to import and export goods (Namibia Port Authority, 2022).

Namibia is strategically positioned with the SADC region offering a gateway for trade to and from the region. One of the great opportunities for Namibia to be positioned as a logistics hub is the fact that economic development in a number of SADC countries is expected to take off rapidly. It is with this in mind that the Namibian government prioritized logistics under its National Development Plan 4 (NDP4) as one of four key strategic economic priority areas to accelerate the country's plans to become a logistics hub. The existing transport infrastructure, although extensive, is inadequate in respect of serving the global logistics market but remains competitive in relation to what is available in the region. In its quest to become a logistics hub, Namibia has been focusing on all modes of transportation, namely road, rail, maritime, and air simultaneously (National Planning Commission, n.d.)

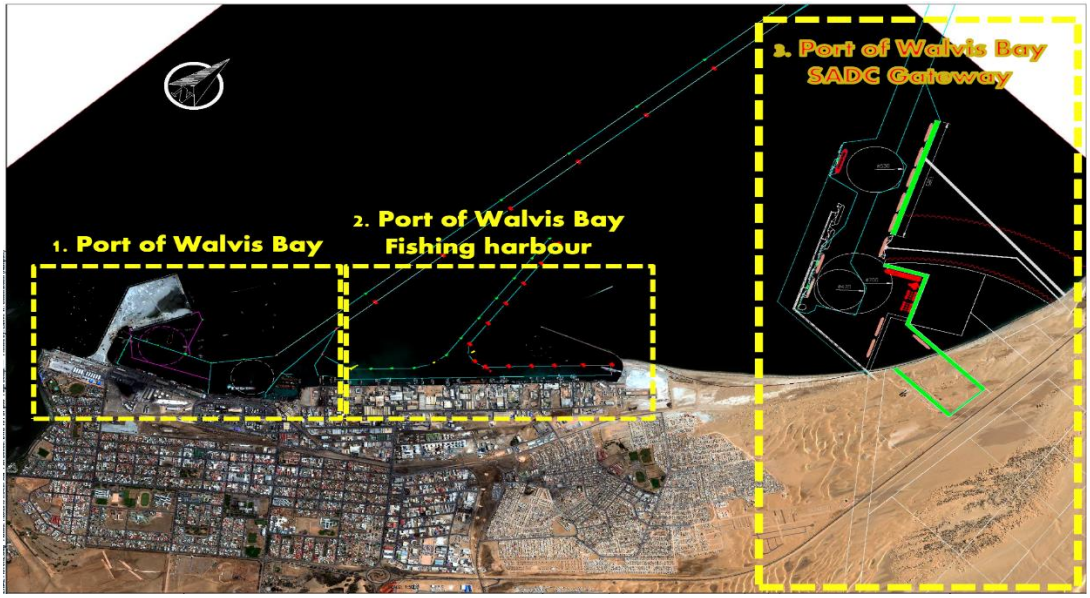
2.1.1. Namibia key infrastructure supporting transport and logistics

Seaport:

The PWB is strategically located halfway down Namibia's coast and provides an easy and fast shipping route between Southern Africa, Europe, the Far East, and the Americas. This is Namibia's largest commercial port, receiving 1,592 vessels and handling about 10 million tonnes of cargo per annum (Namibia Port Authority, 2022). The Port of Walvis Bay has become the preferred African West Coast port and logistics corridor for southern and central African logistics operations (Namibia Trade Directory, n.d). In 2019 the Port of Walvis Bay doubled its container handling throughput capacity from 350 000 TEUs to 750 000 TEUs and bulk and breakbulk cargo to 10 million tons of cargo per annum. The PWB is managed and operated by Namport. The port is a deep-water harbor comprising three sections: the South Port, the Fishing Harbour, and the North Port. A natural bay protects deep water anchorage. The Port of Walvis Bay comprises 11 commercial berths, a tanker jetty, and a dedicated passenger berth for accommodating cruise and passenger vessels (Namibia Port Authority, 2022). Figure 2 is the Birdseye view of Walvis Bay port.

Figure 2:

The Port of Walvis Bay



Source: Gelderbloem (2015)

Road:

Namibia has a well-established road infrastructure, regarded as one of the best on the continent. Namibia's road network consists of about 37 000 kilometers of gravel and 6 000 kilometers of tarred roads. Nearly all roads are well maintained. Namibia is linked by road to South Africa, Angola, Botswana, Zambia, Zimbabwe, and the Democratic Republic of Congo (Namibia Trade Directory, n.d.). Road freight accounts for more than 80 percent of total tonne-kilometers of goods transported in Namibia, including transit cargo. Of the 3 corridors connecting Walvis Bay with countries in the SADC region Walvis Bay Ndola Lubumbashi Development Corridor (WBNLDC) is the busiest, followed by Trans-Cunene and Trans-Kalahari Corridor (TKC) in that order with respect to transit cargo (Simasiku & Jackie, 2018). These highways provide a regional transport corridor intended to reduce shipping times for imports and exports from the neighboring countries to the markets of Western Europe and the Americas by at least five days compared to traditional routes in Southern Africa (Namibia Trade Directory, n.d.). The Namibian roads are managed by the Namibian Roads Authority, which is responsible for the maintenance and construction of roads, and the Road Fund Administration, which is responsible for managing the road fund. Figure 3 is an illustration of Namibian road networks.

Figure 3:

Namibia's key road networks and connections with SADC markets

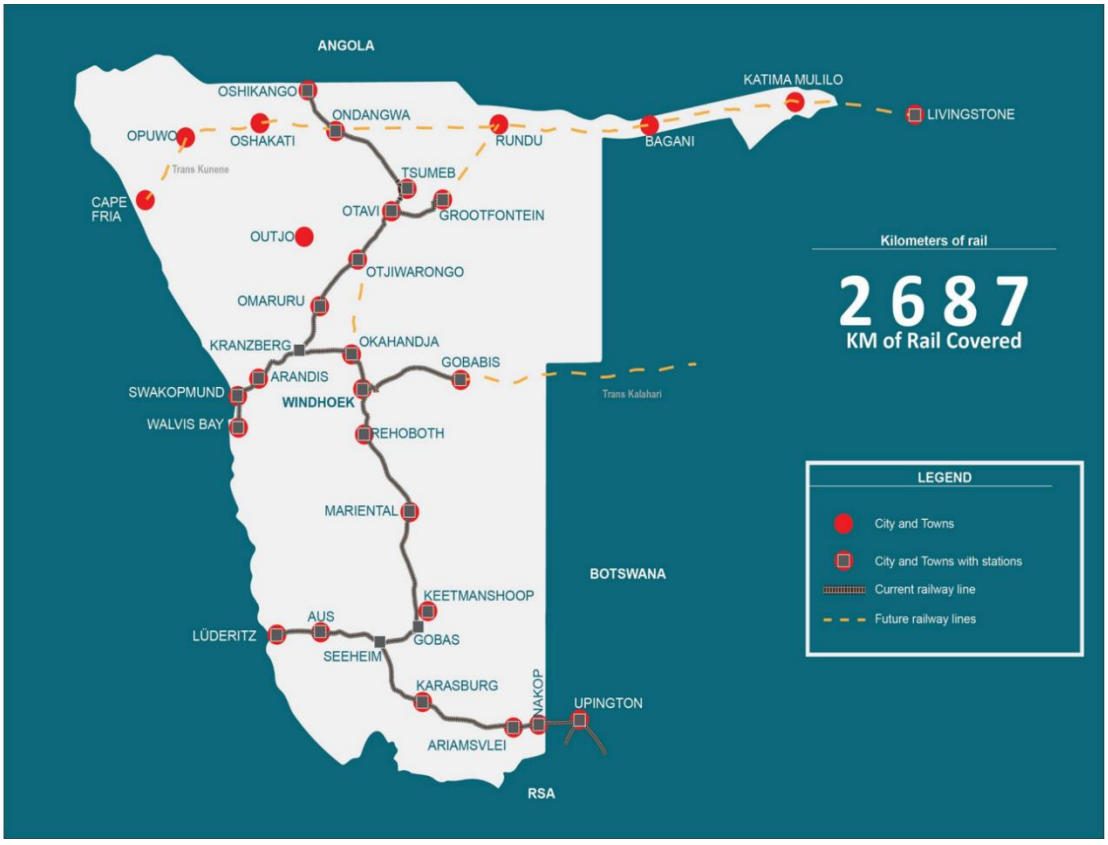
Source: Namport annual report (2022)

Rail:

A 2500 kilometre narrow gauge track runs from the South African border via Keetmanshoop to Windhoek, Okahandja, Swakopmund, and Walvis Bay. A northern branch line connects Omaruru, Otjiwarongo, Otavi, Tsumeb and Grootfontein, while in the far north a newly built track connects Tsumeb and Oshikango. A branch line connects Windhoek to Gobabis in the east. (Namibia Trade Directory, n.d.). Presently, there is only one rail connection to the network of South Africa with which Namibia shares the same gauge (i.e., Cape gauge – 1,067 m) (Simasiku & Jackie, 2018). The national rail is managed by the national rail operator TransNamib. The existing Namibian rail network is showcased in Figure 4.

Figure 4:

Namibia's existing rail network



Source: TransNamib, 2020, Rail line network across Namibia

2.2 Overview of the Dry Ports in Namibia

The PWB handles an assortment of cross-border cargo imports and exports via 2 main trade corridors, namely the TKC and WBNLDC, connecting the port to the respective SADC markets, namely; Zambia, DRC, Botswana, South Africa, Zimbabwe and Malawi (Namport, n.d.). Commodities are handled in 3 formats, namely containers, bulk, and breakbulk at the Port of Walvis Bay. The main commodities handled are salt, copper, coal, sulphuric acid, wheat, sulphur, petroleum, manganese, ammonium nitrate, vehicles, frozen products (fish, beef & poultry), foodstuffs (rice, maize & sugar), project cargo, charcoal, malt, timber, uranium and mining chemicals (Namport, n.d.).

In 2009 the Namibian Ports Authority signed land lease agreements with Botswana, Zambia, and Zimbabwe for setting up dry ports at the Port of Walvis Bay (Namport, n.d.). The Zambian dry port was first to commence with operation in 2010 at the facility, which was constructed at a value of USD 3 million comprising of a land size of 27 430 square meters previously managed by AUCN appointed by the Government of Zambia. The dry port is situated approximately 1 kilometer from the PWB's New Container Terminal (NCT) and is equipped with 72 reefer plugs, covering 30,000 square meters with its own dedicated rail siding. The Dry port offers efficient and cost-effective cargo handling services, both refrigerated and dry cargo, destined for Zambia and other neighboring landlocked nations (Africa Union Cargo Namibia, n.d.).

The Botswana dry port commenced with operations in 2015, where the facility was constructed at a value of 4 million USD with a land area of 36200 square meters operated by SEARAIL (Botswana) (PTY) LTD. The dry port is situated adjacent to the Port of Walvis Bay and is designed to handle a car terminal, container freight station, empty container park, reefer station, and general warehousing. The dry port currently handles bulk, breakbulk, and containerized cargo and offers general warehousing as well as the potential to develop specialized warehousing being able to handle a combined tonnage of 80,000 tons (Searail, n.d.).

The Zimbabwe dry port commenced operation in 2019 on a facility that was constructed at the value of 3 million USD occupying a land area of 19000 square meters, operated by NHS. The dry port is situated approximately a kilometer from the PWB's NCT and offers handling services for bulk, breakbulk, and containerized cargoes, as well as the warehousing and storage of a variety of commodities (National Handling Service, n.d). Figure 5 shows the aerial view of the Botswana, Zambia and Zimbabwe Dry ports' current location.

Figure 5:

Dry ports at the Port of Walvis Bay

Source: google earth images (edited by the author)

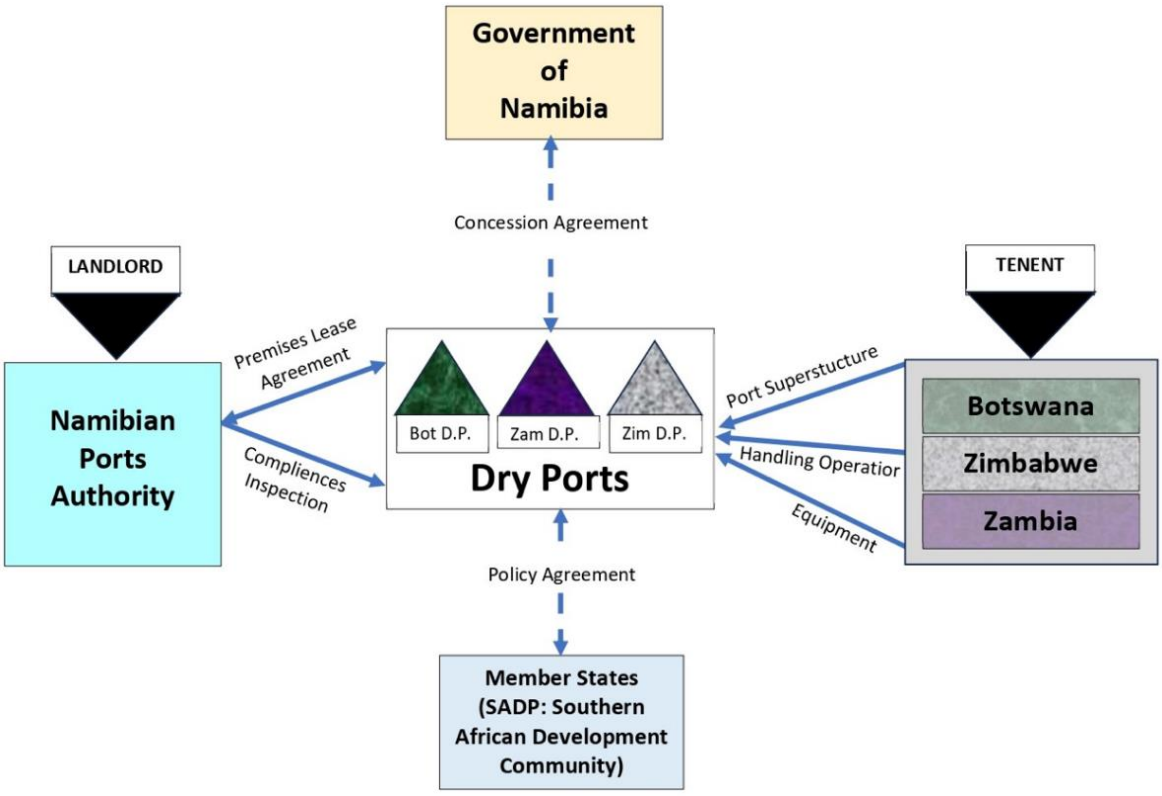
To establish the dry port in Walvis Bay, various governmental entities were involved. All SADC parties had agreed to sign the protocol on transport, communications, and meteorology in the Southern African Development Community (SADC) region.

As per the protocol, the government of Namibia entered into concession agreements with the dry port recipient countries, and Namport was mandated to enter into lease agreements with the dry port recipient countries' nominated dry port operators. Recipient countries can appoint private entities to operate their own dry port. Moreover, building port superstructure and purchasing handling equipment is the responsibility of the recipient countries. However, Namport is acting as the landlord for the dry port and has the authority to inspect various compliance e.g., environmental compliance, and the recipient countries' appointed operator are the tenants.

Member states of the transport, communications, and meteorology in the Southern African Development Community (SADC) region protocol are responsible for formulating various policies, such as road funding policy, road transport policy, railway policy, etc. All member states need to establish their own "National Roads Authority". Moreover, all member states need to formulate a harmonized tariff policy for the dry ports and road transport to avoid a monopolistic environment (Protocol on Transport, Communications and Meteorology,1996).
Figure 6 depicts the involvement of various government entities.

Figure 6

Structure of Various Government Entities Involvement in Establishing the Dry Ports in Walvis Bay



Source: Developed by the Author from (Protocol on Transport, Communications and Meteorology,1996) and lease agreements between Namibian Port Authority with dry port recipient countries nominated dry port operators

Chapter 3:
Literature Review

3.1. Dry port definition

The term “dry port” was first mentioned in scientific journals dating back to 1986 (Hanappe, 1986), as quoted by Roso and Lumsden (2010), and it took approximately another 20 years to revive interest in this subject amongst researchers (Roso & Lumsden, 2010).

However, research on dry ports is still at an early stage, and the majority of studies have focused on the concept development and definition of the activities attributed to dry ports, which differ from each author’s perspective and each country’s application (Rodrigues et al., 2021). Moreover, no clear consensus has been reached regarding an unequivocal definition of the term “dry port” (Cullinane et al., 2012; Nguyen & Notteboom, 2018). An attempt to gain a common understanding of the definition at the Dry port Conference held in Edinburgh in October 2010 proved futile as no consensus was reached, even though the event was attended by experts in the Dry Ports fraternity and invited to provide their perspectives (Roso et al., 2009).

Dry ports are usually described and associated with terms such as “inland logistics centers,” “inland freight,” “inland ports,” “inland freight villages,” “inland terminals,” “inland hubs,” “inland container depots,” “inland clearance depots,” and “intermodal freight centers” (Chowdhury, 2020). At inception, the dry port was associated with relieving congestion around seaports (Crockford, 2022) and was defined as an inland terminal to and from which shipping lines could issue their bills of lading for all types of cargo (Nguyen & Notteboom, 2018). Recently, the concept has been rapidly applied across the globe in response to the challenges facing contemporary logistics in general, and ports and their hinterlands in particular (Cullinane et al., 2012; Cullinane & Wilmsmeier, 2011). In more recent studies, many researchers agree on common characteristics necessary for defining a dry port, and these usually include “an inland terminal,” which is a port situated inland, connected directly with a seaport by high-capacity transportation links, serving as a center for transshipment, where

goods are processed and forwarded to their final destinations (Roso et al., 2009; Beresford et al., 2012; Crockford, 2022; Jaržemskis & Vasiliausk, 2007; Nguyen & Notteboom, 2016; Oláh et al., 2018; Varese et al., 2020).

3.2. Dry Port Elements

Dry ports are key elements of a hinterland distribution network. By acting as an inland extension of seaports (Khaslavskaya & Roso, 2020). However, dry ports themselves also comprise several key elements that ensure their functionality and effectiveness (Rodrigues et al., 2021). Moreover, these elements are applied to improve efficiency in cargo movement, reduce congestion at seaports, and achieve environmental, economic, and social sustainability in logistics systems (Tadić et al., 2020). Dry ports thus comprise the following elements:

a. Location

Dry port location is a critical factor as it determines its accessibility for different transportation modes, and its ability to serve its geographical region efficiently are often sited where they are easily reachable by road, rail, or inland waterway (Tadić et al., 2020). Mason et al. (2015), in their study, argued that dry ports are typically located in strategic inland locations to facilitate access to major transportation links such as highways and railroads and to serve key production and consumption centers. Rodrigues et al. (2021), however, claimed that a dry port should be located near industrial or commercial centers to promote efficient merchandise distribution. Cullinane et al. (2012) emphasized that the location of a dry port should be carefully selected for strategic accessibility to the major transportation networks. Nguyen & Notteboom (2016) explained that dry port location is influenced by several factors and varies depending on whether the system is a developed economy or a developing one. The authors further claimed that the location of dry ports could be influenced by factors including but not limited to geographical location, development status of the country, proximity to seaports, and production base locations (Nguyen & Notteboom, 2016).

b. Intermodal connectivity

Generally, there is consensus amongst the various authors on what intermodal connectivity means, its role, and its significance. Dry ports require robust linkages to seaports, usually through railway or road networks (Varese et al., 2020). These linkages are vital because they assist in managing the flow of cargo, mainly containers, to and from the seaports and reduce traffic congestion, capacity restrictions, and the costs of container distribution. Intermodal connections also involve the links that connect the hinterland through dry ports, which need to function reliably to ensure the serviceability of seaports. If these links fail, it might cause unreliability in the global transport network and subsequently affect the operation of the seaports. Therefore, having intermodal connectivity that includes a dry port can enhance the reliability of the seaport system (Jeevan et al., 2018).

c. Customs procedures

Dry ports perform not just a storage function but also carry out customs clearance for the containers. Therefore, they effectively extend the seaport inland by managing customs clearance further away from the coast (Jeevan et al., 2018). Customs procedures at dry ports are primarily concerned with inspecting, controlling, and managing the import, export, and transit of goods. They often play a crucial role in international trade by ensuring that all traded goods comply with the regulations of the destination country (Varese et al., 2020). Jeevan et al. (2021) provided essential customs procedures at dry ports, which generally include the submission of essential documents such as a customs declaration, commercial invoice, packing list, and bill of lading, which provide details about the cargo, its origin, destination, and value. Secondly, customs authorities often conduct physical inspections of the cargo to verify the contents and ensure compliance with import and export regulations. Thirdly, based on the declared value of goods and tariff classifications, customs authorities assess and collect customs duties and taxes. Fourthly, upon satisfactory completion of all customs procedures, cargoes are released. If there are discrepancies or non-compliance issues, cargo might be seized or refused entry. Lastly, customs operations also include procedures for ensuring security and combating the smuggling of illegal goods.

d. Container and Cargo Handling Facilities

For the efficient functioning of a dry port and to ensure that cargo is moved, stored, and organized in a safe and organized manner, it requires a range of cargo handling facilities in order to achieve quicker turnaround times and enhance overall operational efficiency (Beresford et al., 2012). Cargo handling facilities at a dry port typically facilitate efficient and seamless transfer of goods between different transport modes, such as rail to trucks or vice versa (Nguyen & Notteboom, 2018). These cargo handling facilities are a crucial component of both maritime container ports and dry ports. They form the core infrastructure where the loading, unloading, storage, and distribution of goods take place (Cullinane & Wilmsmeier, 2011). These facilities are usually arranged to enable the smooth and efficient movement of goods to ensure the effective operation of the dry port (Roso, 2007). The facilities usually include a container yard for storing containers and managing both empty and loaded containers, a warehouse for storing goods that have been unloaded from containers or that are waiting to be loaded into containers, cranes, straddle carriers, and reach stackers, as well as forklifts for lifting and moving containers around the dry port, equipment for transshipment which includes machinery for transferring containers from one mode of transport for example, truck to another for example, rail, maintenance facilities for minor repair and servicing of containers and other equipment and information technology to help coordinate cargo movement, track containers and goods, and manage overall terminal operations (Vidya & Naseer, 2022).

e. Logistics & Distribution

Dry ports are essential logistics hubs that connect sea transport with overland modes of transportation such as rail and road. They profoundly influence distribution acting as nodes where goods are not only transferred from one mode of transportation to another, but also where they can be stored, managed and distributed to various destinations. According to Nguyen & Notteboom (2018) dry ports provide necessary logistics and distribution functions that coordinate with and expand the capabilities of seaports. They are often better positioned to handle inland distribution of goods, reducing congestion at seaport and improving overall supply chain efficiency. Dry ports with efficient logistics and distribution systems contribute significantly to the

continuity of container flows to and from the seaport (Jeevan, 2018). Moreover, logistics and distribution services enhance the speed and reliability of services offered at dry ports (Erkyenhun, 2021). Logistics at dry ports thus involves the integration and consolidation on the shuttles of cargo flows aimed from shippers towards the seaports and vice versa (Crainic et al. 2015).

f. Infrastructure and Technology

The use of technology and the presence of good infrastructure are critical in managing dry port efficiency and effectiveness (Vidya & Naseer, 2022). Dry ports usually require infrastructure such as railways and highways for transportation as well as facilities for cargo handling and storage.

Moreover, technology plays a critical role in managing these infrastructural facilities as well as coordinating logistics (Jaržemskis & Vasiliausk, 2011). Technology at dry ports includes terminal operating systems, gate operating systems Electronic Data Interface (EDI) for data exchange with other stakeholders and technologies for cargo handling (Nguyen & Notteboom, 2018). According to Jeevan (2018) dry ports, by decreasing seaport congestion must have the capability to handle high volumes of containers, indicating substantial infrastructure investments. Moreover, in terms of technology dry ports must exercise logistical efficiency and sequencing services to meet seaport client needs through the utilization of sophisticated tracking, routing and coordination technologies.

g. Trade facilitation

Trade facilitation refers to the simplification, modernization, and harmonization of export and import processes. In the context of ports and dry ports, this involves streamlining procedures, improving infrastructure and services, and enhancing coordination and cooperation among port users and stakeholders. Moreover, trade facilitation reduces congestion at seaports, improves freight transit efficiency, and better integrates maritime and inland distribution services (Roso et al., 2009). Jeevan et al. (2018), in their study, emphasizes how intermodal connectivity, through the inclusion of dry ports in the supply chain, can facilitate trade. They further suggest that dry ports contribute to the easy handling and transportation of goods across different regions, thereby improving the speed and reliability of delivery. Furthermore,

by taking over customs procedures and reducing congestion at seaports, dry ports can further enhance the overall trade process. Hence, the strategic inclusion and utilization of dry ports can significantly facilitate trade operations. Overall, by facilitating the flow of goods between maritime and inland locations, dry ports significantly contribute to international trade (Khaslavskaya & Roso, 2020).

h. Government support and policies

Government support and policy are critical for successful dry port implementation. According to Bask et al. (2014), government institutions can either hinder or facilitate dry port development. In some cases, a lack of regulations or coordination between ports can impede the establishment and operation of dry ports. However, strong legislative support and favorable policies can accelerate dry port utilization and success. For example, Cullinane & Wilmsmeier (2011) posit that the direction of dry port development is strongly influenced by policies from both the public and private sectors. In the case of China, lack of coordination and the inability to interpret policies issued at higher levels in a beneficial manner hinder dry port development (Beresford et al., 2012). The orientation towards better communication and connectivity with foreign markets could encourage seaports to develop coordination with hinterland areas based on rail transport. Therefore, effective regulatory support and government policies can create an enabling environment for dry ports, fostering their integration into the overall seaport-hinterland transport framework (Khaslavskaya & Roso, 2020).

i. Collaboration and Stakeholder Involvement

The dry port concept involves a diverse group of stakeholders, including government bodies, port authorities, terminal operators, shipping lines, and customers (Roso et al., 2019). The effectiveness of the dry port is the result of collaborative efforts among the various stakeholders (Nguyen & Notteboom, 2016). Stakeholder engagement in dry port operations thus provides a platform for shared decision-making that ensures smooth running and the successful implementation of sustainable practices. These engagements would usually involve consultation, involvement in policy development, and collaborative decision-making (Tadić et al., 2020). Charuka (2014) thus suggests that dry ports, seaports, and hinterland markets must operate together to achieve

effectiveness. The author further suggested a collaborative framework where operations between the seaport, dry port, and markets are harmonized for seamless business execution. The key elements to asses dry port conformity to international standards are listed below in Figure 7

Figure 7

List of Dry Port's Elements

Source: Developed by the author based on various scholarly studies

3.3. Dry Port classification and categories

Dry ports, or inland ports, are typically classified based on several factors, including their location, functions relative to the main port, mode of transport to the main port, and ownership (Olokoju, 2020; Crockford, 2022; Beresford et al. 2012; Rodrigues et al. 2021). Some dry ports are located near key transportation hubs, while others are in industrial zones to facilitate cargo movement (Varese et al., 2020) and are categorized as close, mid-range, and distance dry ports (Roso et al., 2009). Close dry Ports are usually located near the seaport, within a radius of 50 km, allowing for quick transfer of cargo (Crockford, 2022), whereas a midrange dry port is situated within a distance of between 50 and 500 km, generally covered by road transport (Roso et al., 2009). A distant dry port, on the other hand, is located further away, usually 500 km or more from the maritime seaport. It serves as an intermodal station where goods are moved from marine vessels onto trucks or trains for transportation to their ultimate destination (Rodrigues et al., 2021).

Inland nodes such as dry ports can also be classified based on their functions, with the lowest level being an inland node that consists of a simple container yard and a container freight station (CFS), while the highest is an industrial zone for goods assembly, processing, and manufacturing with integrated onsite terminals. In between the two extremes, nodes may evolve to include inland container depots that offer customs clearance, container services, and empty container depots, and facilities that offer logistics and other value-added services (Nguyen & Notteboom, 2018, Varese et al., 2020, and Jaržemskis & Vasiliausk, 2011).

Rail is the preferred mode of transport for intermodal shipments from seaports to dry ports. Rail transport is particularly effective for long distances, with notable examples being the transcontinental railways in the United States and the Trans-Siberian Railway in Russia. Road transport is mainly used where rail infrastructure is lacking or inefficient or for shorter distances (Roso & Lumsden, 2010). Nguyen & Notteboom (2018) stressed that dry ports play an integral part in an intermodal transport system, implying that they engage with various transport modes such as rail, road, or barging. The authors further alluded to the fact that dry ports aim to improve seaport

accessibility; the selection of transport mode often depends on geographical factors, the volume of cargo, and the infrastructure's readiness.

Nguyen and Notteboom (2018) linked dry ports and modes of transport based on location and claimed that rail-oriented dry ports are those that are typically located farther from seaports and rely heavily on railway connections for cargo transport; road-oriented dry ports are usually situated in close proximity to seaports where trucking is the predominant form of transportation, and multimodal dry ports are those that are equipped to handle multiple modes of transport for cargo transfers, having systems and infrastructure in place for cargo transition between rail, road, and sometimes waterways.

According to Oláh et al. (2018), the choice of ownership model for dry ports often depends on factors such as the level of infrastructure development, the strength of the private sector, and the government's approach to economic regulation and development. Varese et al. (2020), in their study, concluded that the choice of ownership model can significantly influence the service quality, efficiency, and operational features of the dry port. Three ownership models are generally identified by various authors, namely: public dry ports, which are usually owned and operated by public or government entities providing services to any logistics companies that need them, and Private Dry Ports, which are normally owned and run by a particular company for exclusive use catering to that company’s unique needs (Crockford, 2022).

3.4. Dry port concept benefits and challenges

While the dry port concept offers several potential benefits, it also presents certain challenges that require careful consideration. Dry ports provide direct access to sea routes, facilitating international trade (Oláh et al., 2018). They alleviate congestion at seaport gates by redistributing cargo flows arriving by sea (Varese et al., 2020), drive economic growth, including foreign investment, and create jobs in their respective vicinities (Oláh et al., 2018). Value-added services such as container repairs, maintenance, warehousing, and distribution and providing shippers with a seamless, efficient supply chain solution are just some of the services provided at many seaports around the world (Olokoju, 2020). Dry ports further enable a wider geographical distribution of cargo and make goods more accessible in landlocked countries (Beresford et al., 2012). Jeevan et al. (2018) affirmed that dry ports enhance the consistency of container flows to and from seaports, help reduce unnecessary trips, increase infrastructure utilization, and promote a steadfast stream of container volumes to seaports. Moreover, dry ports may lead to significant savings in transport costs by enabling economies of scale through cargo consolidation (Chowdhury, 2020). Finally, dry ports play a key role in achieving sustainability in port logistics as they integrate economic effectiveness, environmental stewardship, and social responsibility (Tadić et al., 2020).

The development of a dry port usually requires significant investment in infrastructure, including rail links, warehousing, and container handling machinery (Mason., et al., 2015). These facilities also require regular maintenance, which often leads to additional costs (Cullinane & Wilmsmeier, 2011). Cullinane & Wilmsmeier (2011) further alluded that transportation between the port and dry port also increases carbon emissions unless environmentally friendly modes of transport like rail are used. At the port of Walvis Bay, trucks are mainly used for hauling cargo from the quay to the dry port and vice versa, where the distance is less than 2 km. Dry ports are inherently dependent upon seaports for their operation, and therefore any challenges experienced at seaports can negatively affect dry port operations (Bask et al., 2014). While dry ports can help alleviate traffic congestion, they can also become sources of congestion themselves if not properly planned and managed (Zin, 2019). Moreover, the operations at dry ports might lead to additional cargo handling,

which may inherently increase the risk of damage and loss of cargo (Nguyen & Notteboom, 2018).

3.5. Dry port implementations

The dry port concept has been applied in different parts of the world, and its application varies based on a country's specific local needs, policy environment, infrastructure, and logistics networks. They are crucial components in the global supply chain, fostering efficient cargo movement from coastal ports to inland destinations (Varese et al., 2020). In Southeast Asia, the concept has been applied in countries such as China, where dry ports are primarily used as extended gates to better manage the flow of goods. Another application of the dry port concept in China was in cities like Chengdu and Chongqing, where dry ports were developed to handle seaborne trade, linking their factories to foreign markets (Jaržemskis & Vasiliausk, 2011).

Olukoju (2020), in their study, expressed a similar opinion on the universal application of the dry port concept. He further alluded to the fact that the concept is primarily applied in regions where port congestion is an issue and where there is a strategic need to improve the effectiveness of a region's supply chain. The United States (US), for instance, applied the dry port concept with the intention of reducing congestion at seaports, particularly in regions with hig h import-export traffic (Bask et al., 2014). A specific example where the dry port concept has been applied in the US is in Virginia, where the Port of Virginia is connected to the Virginia Inland Port (VIP), which is situated approximately 200 miles from the port but is connected via rail services (Cullinane & Wilmsmeier, 2011).

In Europe, dry ports handle all the tasks typically done at the seaport (Varese et al. 2020). These dry ports have been developed through high integration with their hinterlands. The integration is driven mainly by cooperation between port authorities, port terminal operators, rail companies, public organizations, and logistics players (Nguyen & Notteboom, 2016). Dry ports such as Belgium's Dry Port Muizen,

implemented in 1994 by the national railway, offer services such as transshipment, tracking, storage, and depot services (Roso & Lumsden, 2010). In Sweden, the Port of Gothenburg established a number of dry ports situated in Vänerpark, Vänersborg, and Falköping. These facilities are directly connected to the port via rail links, allowing them to effectively handle and distribute goods to various inland destinations (Cullinane & Wilmsmeier, 2011). In Germany, the Port of Duisburg is the world's largest inland port and functions as a successful dry port. It is connected via rail to seaports in Rotterdam, Antwerp and Hamburg handling both goods and passengers (Chowdhury, 2020).

In Africa, there has been an increasing trend toward dry port implementation (Chowdhury, 2020). Dry ports are crucial to landlocked countries for ensuring efficient access to overseas markets. Uganda, for instance, uses the Mombasa port in neighboring Kenya, and goods are transported to dry ports located in Kampala and other parts of the country (Cullinane & Wilmsmeier, 2011).

Rwanda and Burundi, situated in East Africa, do not have direct sea access, depend on neighboring countries for their imports and exports, and have developed dry ports to enhance their logistics operations (Oláh et al., 2018). The Heavily Indebted Poor Countries (HIPC) initiative established dry ports in Mali and Burkina Faso to foster international trade (Olukoju, 2020).

The City Deep Dry Port is another major dry port located in Johannesburg, South Africa, for the movement of goods, in particular containers, between the Port of Durban and Johannesburg. The dry port is linked to the Port of Durban via road and rail and is recognized as one of the most successful dry ports in the world (Charuka, 2014).

The literature review underlines a significant knowledge gap in the understanding of dry ports, particularly those situated within the PWB in Namibia. While traditional dry ports adhere to the established criteria and are typically located in close proximity to a seaport or inland areas, these unconventional dry ports challenge the conventional definitions and norms associated with such logistics nodes.

The lack of research and assessment regarding the compliance of these dry ports with internationally recognized benchmarks underscores the need for this study. By examining their functions, characteristics, and alignment with established standards, this research aims to provide clarity on whether these unique dry ports can be considered legitimate types of dry ports and whether they effectively fulfill their intended purpose in facilitating international trade for landlocked countries.

Chapter 4
Research Methodology

This chapter specifies the methodology followed to determine the extent to which the dry ports at the port of the PWB, Namibia, meet or align with the internationally established benchmarks and criteria for a logistics node to be classified as a dry port. This chapter specifies the research design, data collection methods, and data analysis approach used.

4.1 Research design

This study followed a qualitative research design approach. According to Blair (2016), qualitative methodologies bring a deeper understanding of human behavior and people's lived experiences. Moreover, in a qualitative approach, the inquiry is usually broad and open-ended, thus allowing participants to raise issues that matter most to them (Choy, 2014). The main reasons for following this approach were that it allowed the researcher to probe the underlying values, beliefs, and assumptions of the participants to determine the extent to which the dry ports at the PWB align with internally recognized benchmarks.

4.2. Data Collection Methods

The data collection methods comprised a literature review, where secondary data was sought through comprehensive document analysis on dry port definitions, elements of a dry port, the dry port categories and Dry port implementations. This data was sought from journal articles, dissertations, case studies, governmental reports, and official websites mainly addressed research questions RQ1 (*How are dry ports typically defined, and what key characteristics and functions are universally recognized as essential for designating a logistics node a dry port?*). The extensive review of literature provided a strong theoretical foundation and facilitated the identification of trends, gaps, and challenges within the dry port domain.

Secondly, primary data was sought through structured and semi-structured interviews to address RQ2 (*To what extent does the Namibian Dry ports meet or align with the internationally established benchmarks and criteria for a logistics node to be classified as a dry port?*) through direct interactions with the key informants via Microsoft TEAMS. The interviews were of crucial importance for uncovering the functions and features of the dry ports at the PWB. Moreover, the interviews encouraged participants to elaborate on their experiences which were not captured in secondary sources. Lastly, the data gathered from the reviewed literature and interviews was analyzed through a comparative approach. The comparative analysis aided in the identification of commonalities, variations, and patterns that emerged within the data. Additionally, this approach further enhanced the depth and reliability of the findings.

4.3 Selection of Key Informants/ Sampling

A representative sample of 8 key stakeholders was selected. Firstly, the number of participants selected for this study was sufficient to allow a breadth of perspectives. Secondly, the limitation of only one 1 participant from each group of stakeholders ensured a balanced representation, which further allowed for in-depth discussions from the manageable group size.

The selection of the participants was carried out through purposive sampling, which provided the researcher scope to select participants who they presumed would provide them with the kind of information they needed. Moreover, expert sampling was also applied, where the researcher selected participants possessing the necessary logistics expertise to provide the required information.

4.4 Sources of Data – Key Informants

The primary sources for obtaining data comprised key players within the Namibian transport and logistics sector. The choice for selecting the said key players was informed by their invaluable first-hand insights into the operational dynamics, challenges, and implications in the region. By engaging both public and private sector representatives, including government agencies and industry associations, the study aimed to capture a comprehensive range of perspectives and experiences of the

participants in order to assess the extent to which the dry ports align with international benchmarks.

The inclusion of key government entities such as the MOWT, NAMRA, Namport, and the WBCG was vital. These agencies are central to regulatory frameworks, policy implementation, logistics infrastructure development, and trade facilitation in Namibia. Their insights provided a comprehensive understanding of the macro-level considerations influencing dry port operations.

4.4.1 Key roles of government entities:

- **MOWT:** Is responsible for sectoral policy and regulation and has a mandate to ensure infrastructure development and maintenance on transport and state asset management through operational excellence and prudent management of resources (Ministry of Works and Transport, n.d).
- **NAMRA:** This is the Namibian Revenue Agency and is the nation's tax collecting authority. Moreover, it is responsible for administering the Namibian tax laws and customs and excise services (NAMRA, n.d.).
- **Namport:** Manages Namibia's ports in Walvis Bay and Lüderitz and is responsible for promoting the Namibian ports as preferred routes for sea-borne trade between SADC, Europe, Asia, and the Americas. (Namibian Ports Authority, n.d.).
- **WBCG:** Founded by Namport, established as a Public Private Partnership (PPP) and operates a service and facilitation center to promote the benefits of using the Walvis Bay corridors through the Port of Walvis Bay to and from Southern Africa (Jacquelineangula, n.d.)

Private sector organizations, including the WBPUA, CLOF, and the various dry port operators SEARAIL and NHS, ensured a well-rounded perspective. Moreover, the above-mentioned entities are directly involved in the day-to-day operations and commercial aspects and thus offered insights into the micro-level intricacies and challenges.

4.4.2 Key roles of private entities:

- **WBPUA:** Represents all entities associated with cargo, freight, and shipping activities in the Port of Walvis Bay (Namibian Ports Authority, n.d.)

- **CLOF:** Represents all Container Shipping Lines only calling and servicing Walvis Bay Port directly (Namibian Ports Authority, n.d.)

- **SEARAIL:** Operates the Botswana Dry Port facility adjacent to Namport in Walvis Bay (Searail, n.d.)

- **NHS:** Operates the Zimbabwe Dry port, based in Walvis Bay, Namibia (National Handling Service, n.d.)

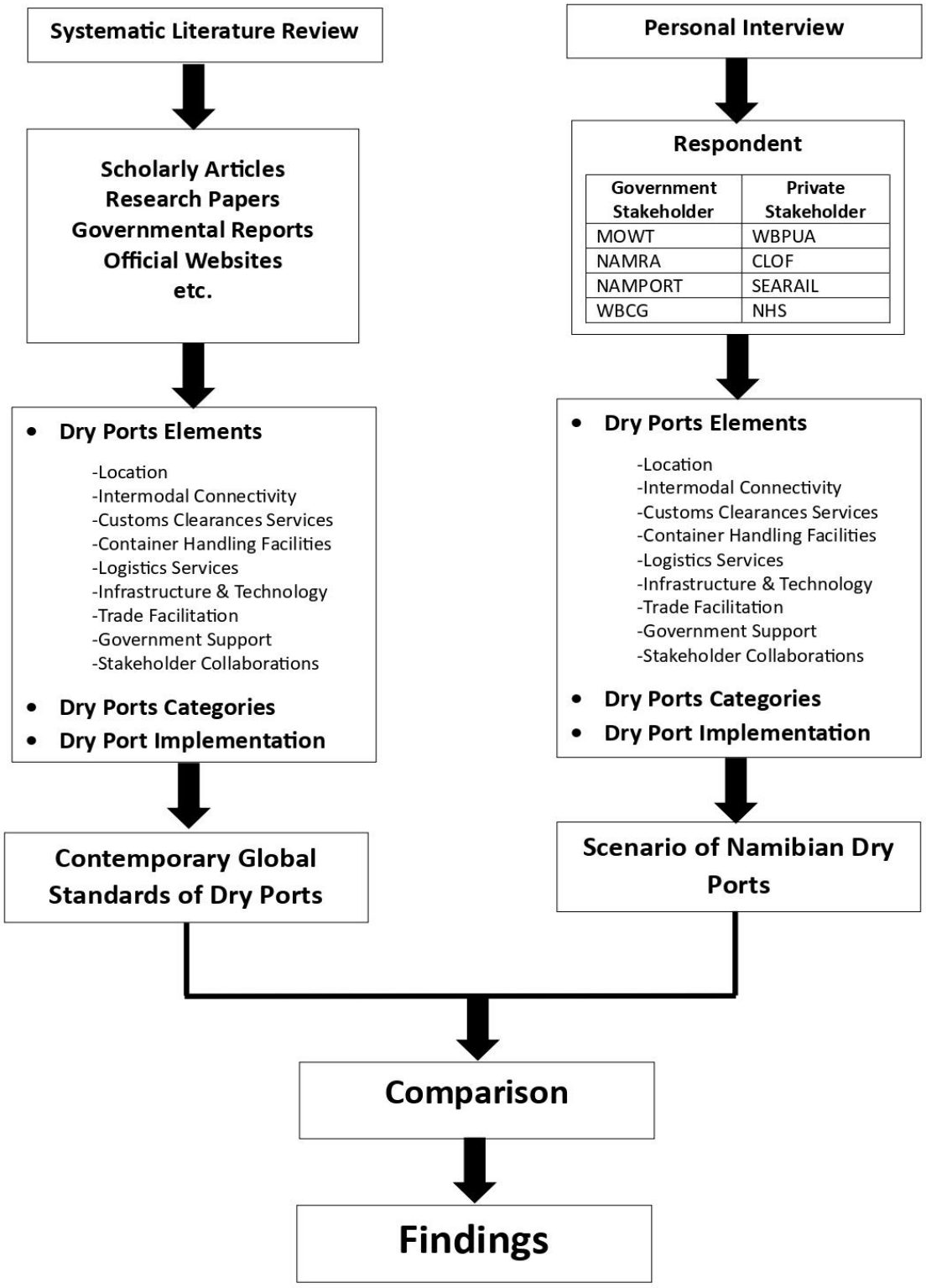
4.5. Data Analysis

Qualitative thematic analysis was followed to analyze the data. Firstly, the voice recordings from the interviews, which provided the primary raw data, was converted into texts in Word documents. The responses provided were then organize and interpreted in order to extract meaningful insights and explorations of key issues related to the research RQ2. Thematic analysis was then applied to identify recurring patterns and themes within the data. Secondly, content analysis was employed on secondary data to obtain a comprehensive overview of available literature. This approach aided the researcher in identifying essential information, trends, and connections relevant to RQ1. Thirdly, a comparative analysis approach was followed in order to enhance the depth of the research by juxtaposing and contrasting diverse viewpoints and data sources. This was done with the aim of understanding the variations and consistencies that exist in the responses, which allowed the researcher to formulate well-grounded conclusions.

Figure 8 presents a comprehensive visualization of the research methodology applied in this investigation.

Figure 8

Comprehensive Illustration of Research Methodology



4.6. Limitations of the study

This study limitation arose due to the operational changes within the study period. Specifically, the operator of the Zambia dry port was replaced by a new operator recently. As a result, the researcher excluded Zambia dry port as this change in operations had the potential to introduce variations in operational practices, and therefore, the study findings regarding Zambia dry port may not have fully represented the current state of affairs.

4.7 Ethical Consideration

The study was guided by strict adherence to the research ethics of the WMU. The respondents' rights were respected so that they could withdraw from the research at any time and have their personal data deleted in any event. Consent was sought from each respondent prior to the commencement of the interviews, and confidentiality was guaranteed as an integral part of the research. Moreover, the research was conducted with the utmost honesty, avoiding distortion and misleading data manipulation, seeking collaborative support that was duly acknowledged, and endeavoured to arrive at conclusions based on objective inferences that were merely guided by the collected data.

4.8 Validity and Reliability

To enhance the validity and reliability of the study, a members-checking validation strategy was employed, which allowed the researcher to share the findings with the research participants and ask for their feedback and verification to ensure that their perspectives were accurately represented. According to Zairul, (2021) member checking involves a process to allow the data to be validated to ensure the credibility of the source. Moreover, it is used to confirm the accuracy of the data and is normally returned to the participant after the event or session.

Chapter 5

Data Analysis

The central question that drove this analysis was whether the dry ports nestled within the port of Walvis Bay could be accurately classified as dry ports according to established criteria, considering their atypical location within the seaport port of Walvis Bay. This chapter set out to explore and evaluate whether the dry ports within the Port of Walvis Bay could be accurately categorized as dry ports based on universally recognized criteria for logistics nodes. It further aimed to scrutinize the structural characteristics, functions, and operational procedures of these unique dry ports to determine their alignment with international benchmarks and criteria. The primary purpose of this analysis was thus to assess the degree to which these unique dry ports adhere to globally recognized standards of dry ports.

A qualitative research approach was implemented to obtain primary data attained from interviewing 8 stakeholders. The responses were obtained from 9 focus elements to elicit participant's insights and perspectives with the aim of determining the extent to which the dry ports fulfill the internationally recognized criteria. The elements from which the responses were obtained included the dry port location and its effectiveness, the degree of intermodal connectivity, the provision of customs and documentation services, the provision of container handling services and available equipment, the provision of logistics and distribution services, available physical infrastructure and technology, the provision of trade facilitation, the degree of government support and the level of collaboration and stakeholder involvement. The data gathered and the discussion of the findings is deliberated below.

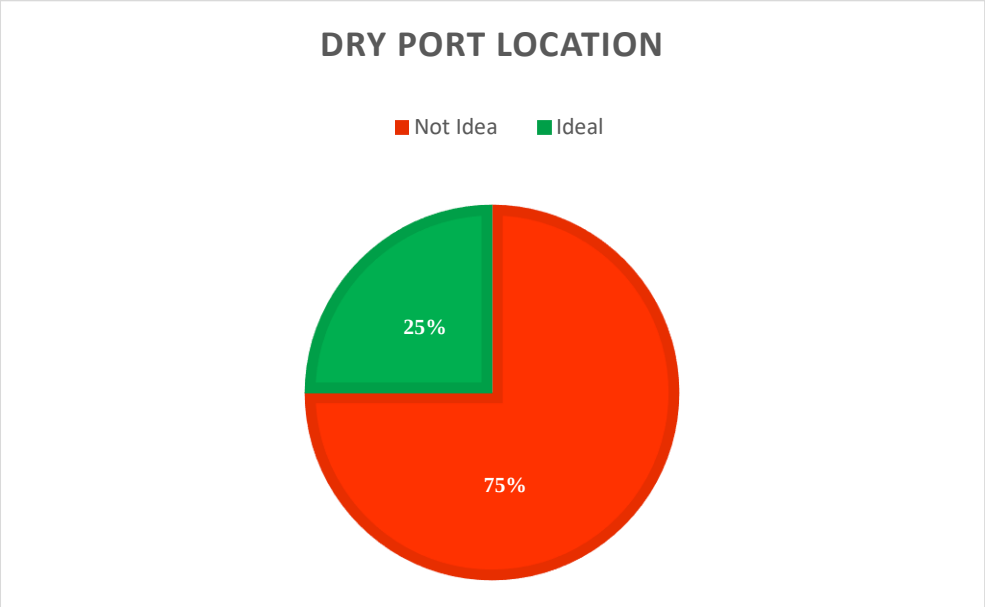
5.1. Analysis of Conformity with Dry Port Elements

5.1.1. Dry port location

The consensus among the interviewed respondents overwhelmingly indicates that the present location of the dry port is deemed unfavorable and unsuitable by a substantial 75% majority. Whereas only a quarter, or 25% of the respondents, shared contrary views citing that the current location of the dry ports is indeed ideal and suitable (figure 9).

Figure 9:

Views on the dry port location



Those that indicated that the location is not ideal comprise from both the private and public sectors including Namport, SEARAIL, WBCG, NAMRA, WBPUA, and CLOF. The interviewed respondent from Namport highlighted the unsuitability of the location of the dry port in the following manner: *"The location in my view is not really ideal, simply because the dry ports are taking up space which the port itself could have used to boost its own capacity."*

The respondent from NAMRA highlighted a noteworthy issue regarding port congestion, which is caused by the dry port's location. In the respondent's view, this location factor is a central contributor to congestion challenges within the port. According to the respondent, *"….because of the location of the dry port causes congestion in the port as more truck movements are notable running between the main port and the dry port. As a result, this may hamper the operations of the main port."*

On the other hand, 25% of the respondents, including NHS and MOWT, stated that the location is indeed ideal, claiming the dry ports serve as extensions of the recipient countries at the Port of Walvis Bay and entices cargo more effectively for the recipient countries. Moreover, it offers a cost-benefit as opposed to an inland location. According to MOWT respondent, *"The location is ideal as the dry ports are situated close to the seaport, and it will be costly to have the dry port further away from the sea."*

Nevertheless, respondents who voiced a negative view about the dry ports location primarily expressed interest in the value contribution of the dry ports and whether they really meet their intended purpose. Conversely, those respondents who held a favorable view of the location were primarily focused on the cost-effectiveness and attractiveness of enticing cargo from the recipient countries.

5.1.2. Intermodal Connectivity

The findings indicate that half of the respondents believe that dry ports are somewhat connected to the existing transportation network, encompassing both road and rail infrastructure. CLOF, NHS, WBCG, and WBPUA emphasized the prevalence of road transport over rail, with rail connectivity being less pronounced. Furthermore, it was noted that there is a lack of connectivity with the dry port recipient countries. As articulated by the CLOF, "*Intermodal or multimodal connectivity is somewhat lacking, particularly due to the absence of rail infrastructure at the dry port. Dry ports heavily rely on road transport, although rail is considered a critical element."*

WBPUA expressed concern about the existing limitation impeding the intermodal connectivity of these dry ports. According to the respondent, *"There is connectivity*

by road only, but there is a limitation on the rail side. Namibia's rail network only connects with South Africa."

MOWT and SEARAIL, representing 37%, were of the opinion that intermodal connectivity exists. MOWT provides general oversight of the functionality of Namibia's transportation network, which connects with the port, according to the respondent,

> …. there is 100 percent intermodal connectivity on the roadside, and rail infrastructure also exists within the port area, linking the port and the dry ports. but yes, this rail network does not extend to neighboring countries; however, road connectivity is quite strong.

SEARAIL expressed a similar view about intermodal connectivity. According to the respondent, *"The dry port has intermodal connectivity via road, which is serving satisfactorily, but much needs to be done in terms of rail connectivity*."

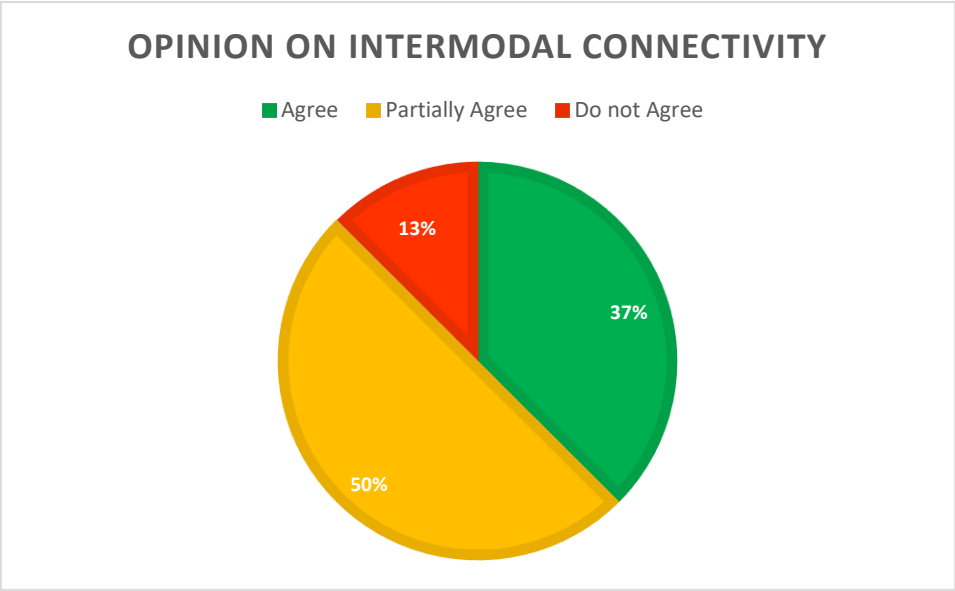
Among the interview respondents, 13% mentioned that road connectivity is not a real means of intermodal connectivity. According to Namport,

> …. all cargo accesses the dry port mainly by road, and therefore intermodal connectivity does not really exist as only one mode of transport is available to the dry ports.

Figure 10 presents a statistical representation of the mixed views of the respondents on the connectivity of the dry ports.

Figure 10:

Views on intermodal connectivity



5.1.3. Customs Clearance

The findings from the interviews reveal that 88% of respondents cited that the provision of customs clearance services at the dry ports is not available. In contrast, 12% expressed that customs clearance services are available (Figure 11).

Figure 11:

The provision of customs clearance services

The opinions of the respondents, NAMPORT, SEARAIL, NHS, WBCG, NAMRA, WBPUA, and CLOF, were largely congruent, citing that dry port operators are not allowed to perform customs clearance functions neither can customs clearance services be carried out while cargo is held at the dry ports. Moreover, prior to cargo being channeled, mainly imports from the main port to the dry ports, it requires customs clearance. Thereafter, the cargo can be transferred from the main port to the dry port. Licensed or certified customs brokers perform this service on their behalf. According to CLOF respondent,

> The dry ports do not offer customs services as they are not mandated to do so. This is done by private licensed clearing and forwarding agents in the main port and thus defeats the purpose of a dry port, as cargo first needs to be cleared before it can be channelled to the dry ports.

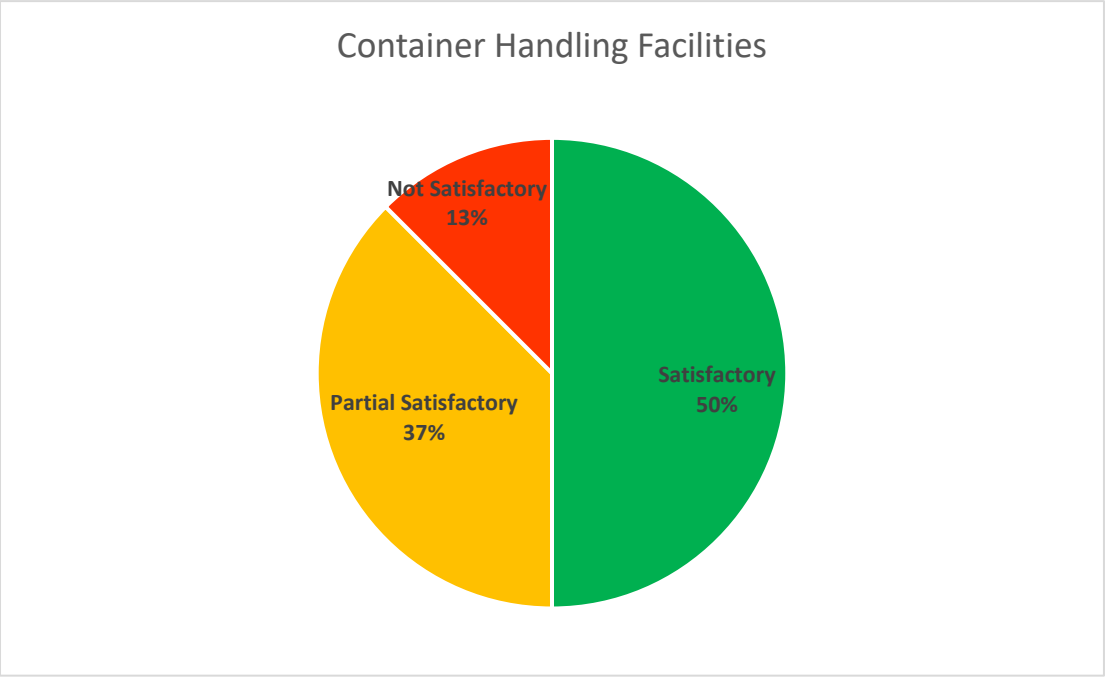
Surprisingly, MOWT held a different opinion representing a minority of 13%. This respondent expressed the opinion of the existence of customs services based on the dry port proximity. According to the respondent, "*As the dry ports are located inside the port, which is a customs bonded area, they should provide customs clearance services. So, we can say customs clearance services are provided at the dry ports."*

5.1.4. Container Handling services and available equipment

The views regarding the provision of container handling services are depicted in Figure 12. The findings indicate a consensus among the respondents that container handling services are indeed available at the dry ports. Notably, a majority, constituting 50%, rated these services as satisfactory, thus affirming the presence of the requisite equipment for effective container handling. According to the WBCG respondent, *"…. yes, the dry ports are all paved, and they have equipment to handle the containers and stack them properly and they have reefer plug points to handle refrigerated containers."*

Figure 12:

Views on container handling services



In contrast, 37 percent of the respondents expressed partial satisfaction. According to NAMRA,

> Dry port operators do handle containers destined for the markets they serve, but due diligence is exercised to discourage the operators from competing directly with the port authority and the services it provides. It's worth noting that only the Botswana dry port managed by SEARAIL has all the necessary equipment for container handling, including a reach stacker, side loader truck, trailer, and forklift.

Conversely, 13% of respondents NHS expressed dissatisfaction with the service provision, citing their lack of necessary equipment. They rely on periodic equipment rentals, particularly during unusual surges in container volumes.

5.1.5. Logistics Services

The findings indicate that 50 percent of the respondents voiced that the existence of logistics services at the dry ports is satisfactory. According to SEARAIL, *"…we offer a complete logistics solution which includes handling of containers and storage and also warehousing services."*

NHS mentioned the types of logistics services they usually provide, "*we do stuffing of containers and offer contracts to small truckers for transporting cargo."*

While a quarter, 25% of the respondents, concurred that the provision of logistics services can be characterized as somewhat acceptable. In particular, WBCG and MOWT held the view that, while a comprehensive array of logistics services are available at the dry ports, there remains room for improvement. Also, the restrictions imposed on dry ports, for example, on customs clearance, do not allow them the scope to provide logistics services to their entirety.

The remaining quarter of respondents, constituting 25%, express a dissatisfactory view concerning logistics services. This segment of respondents comprised of

Namport and the WBPUA. They asserted that dry ports, in their assessment, do not offer logistics services per se.

According to Namport respondent, *"They don't necessarily provide this service. Much of this service is done by the private sector/ logistics service providers."*

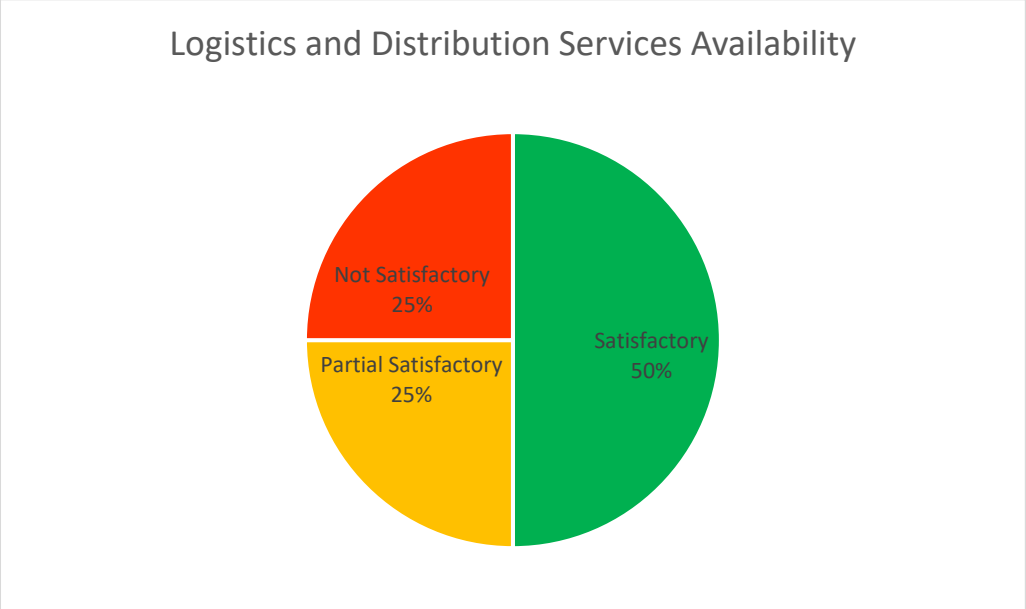
According to NAMRA,

> Dry Ports offer logistical support services, but their application to act as customs brokers was rejected by the licensing authority NAMRA. This means there are some restrictions, and they cannot really offer full logistics services.

The findings pertaining to the provision of logistics services are presented in Figure 13 below.

Figure 13:

The provision of Logistics and Distribution Services



5.1.6. Infrastructure and Technology

The findings reveal that 63% of the respondents held somewhat satisfactory views with respect to infrastructure and technology within the context of dry ports. Key stakeholders, namely Namport, SEARAIL, NHS, WBCG, and CLOF, were amongst those who endorsed this viewpoint. Their collective assertion affirms that the dry ports indeed possess the essential physical infrastructure, marked by fully paved areas and secure demarcation through concrete fencing.

According to Namport,

> The infrastructure is, to a certain extent, suitable for operating as a dry port since these facilities are all paved with secured fencing, but the systems they use in terms of technology I'm not really sure of. But as far as I know, they don't have sophisticated technology at this stage, perhaps only limited and suitable for their operations.

The respondent from NHS explained that they do make use of technology and possess the necessary infrastructure. However, they underscored that the current state of the technological infrastructure falls short of complete satisfaction, emphasizing the imperative for substantial further advancement to be made in this regard. According to the respondent,

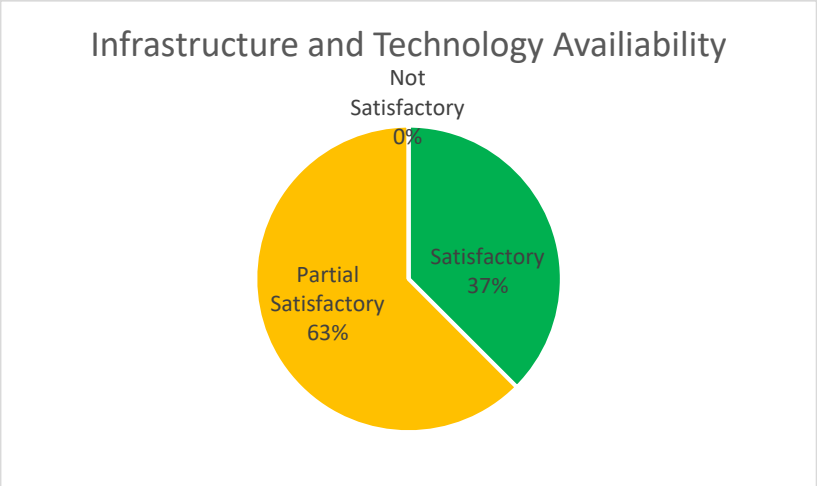
> Presently, we are only using the systems to track stock and cargo coming in and out for invoicing purposes. However, there is a pressing need for technological improvement in our operations. Additionally, in terms of infrastructure, we have a fully paved and fenced facility, and our establishment is equipped to handle and accommodate a diverse range of cargo types.

In contrast, 37% of respondents comprising the WBPUA, MOWT, and NAMRA have appraised this service as satisfactory, underpinned by the presumption that sound physical infrastructure and technological systems are intrinsic prerequisites for managing these facilities effectively. According to NAMRA, *"Internet and other IT systems are stable and modern technology are available at the Dry."*

Figure 14 provides a graphical illustration of the statistical data pertaining to the views of the respondents on the state of the infrastructure and technology at the dry ports.

Figure 14:

Views on infrastructure and technology availability

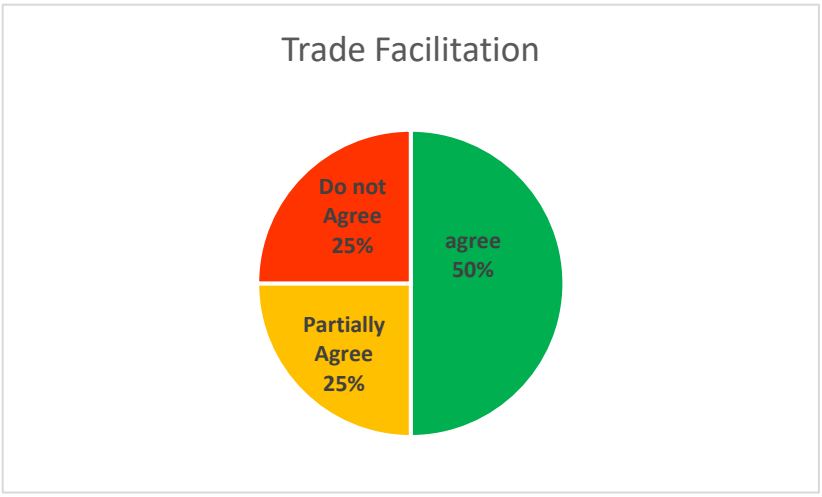


5.1.7. Trade facilitation

The results indicate that 50% of the respondents were of the opinion that the dry ports are indeed geared and have the capacity to carry out the function of trade facilitation, whereas 25% perceived it to be partial, and the remaining quarter 25% perceived this function not to be provided at the dry ports. A graphical illustration of respondents' opinions on the role of dry ports in trade facilitation is presented in Figure 15.

Figure 15:

Views on the provision of trade facilitation



The respondent from MOWT cited that the dry ports' contribution is important to Namibian overall trade facilitation performance. According to the respondent, *"…they play a critical role in trade facilitation for cargo destined to their respective countries, which is also adding value to Namibia's trade facilitation performance."*

The respondent from SEARAIL cited how they facilitate trade; according to the respondent, *"We offer end-to-end logistics services for clients in Botswana, and we facilitate cargo movement for goods destined to Botswana, for instance, bulk sugar…"*

Amongst those that perceived the provision of trade facilitation to be partial include Namport, mandated by the Namibian Government to oversee and manage the ports as well as the operations of the dry ports, seconded by NAMRA responsible for enforcing customs regulations. Namport highlighted that the dry ports, to a certain degree, partake in trade facilitation simply due to their close proximity with the PWB, which is considered a significant conduit in the logistics and supply chain enabling the facilitation of trade and thus benefits from the activities happening at the port. Moreover, these dry ports also handle cargo destined for their respective countries. According to Namport,

> The PWB serves as an important node for trade facilitation, and in that sense, the dry ports also participate in this as they are situated in the port. To a certain extent, they also provide the same services as the port, but on a small scale, and thus they also facilitate trade, but not to a large extent as they do not really handle much cargo.

5.1.8. Government Support

The respondents had mixed views on whether government support is accorded to the dry. The majority, 50% of the respondents, perceive that government support is indeed accorded to the dry ports, and amongst those that supported this notion were Namport, MOWT, NAMRA, and the CLOF. The respondent from Namport stated that,

> Namport, as a government agency, does provide the necessary support in terms of offering concessions to the dry ports on certain cargo operations for project cargoes which are handled by the dry ports. To a certain extent, we also refer clients to the dry ports, for instance, if the port does not have the

> necessary capacity or space to accommodate cargoes destined to the respective dry port recipient countries.

While the majority of the respondents agreed that the government offers full support, 25% had some reservations about this, citing that there is somewhat support from the government, but there are some shortcomings specifically from NAMRA as some dry ports are still finding it challenging to get their customs bonds fully registered. According to WBCG, *"…there is government support to a certain extent, but more support is required, especially from NAMRA, as much of the dry ports are still struggling to properly register their bonds."*

Notably, WBPUA attempted to tackle the issue concerning the lack of government support for dry ports. They suggested that it falls upon the dry port operators themselves to take the initiative and consistently engage with government bodies, expressing their specific needs and areas where support is necessary. However, according to the respondent,

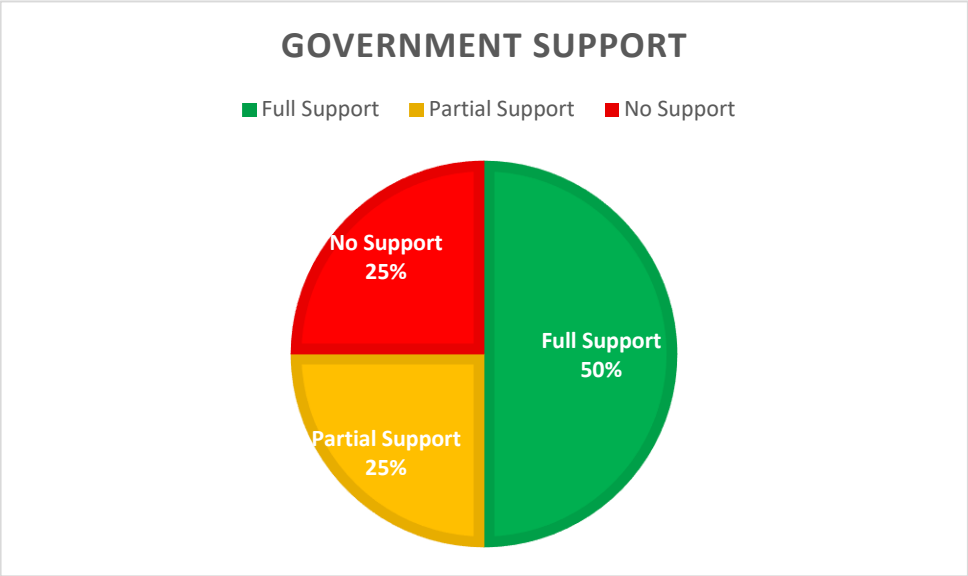
> The government does offer support to the industry, but dry port operators don't attend any of the engagements for guiding policy and other issues.

25% of the respondents, however, had contrasting views, mainly the dry port operators. They cited that NAMRA lacks suitable dry port procedures and regulations, as a result, impedes the operations of the dry port. SEARAIL expressed the opinion regarding the government support that the dry ports' pleas and inputs submitted to NAMRA in 2018 for updating the regulations have not borne any fruit.

NHS respondent stated, *"We are not getting much government support as everything we have done is from our own pockets, and there is a lack of procedures from the Namibian government's side that's why we cannot operate to our full potential."*
Figure 16 showcases the respondent's opinion percentage.

Figure 16:

Views on Government Support



5.1.9. Stakeholder Collaborations

The findings on collaborations of the dry ports with public and private stakeholders indicate that a majority of 75% of the respondents agreed, namely, Namport, SEARAIL, NHS, WBCG, MOWT, and NAMRA, while the rest of the respondents seconded this view reservations (Figure 17).

From the public sector, the respondent from Namport stated that,

> We do collaborate with the dry ports as we, as the port, often accompany them to their respective countries to promote the dry port as well as the port of Walvis Bay to attract cargo to Walvis Bay. We also speak and attend conferences to promote the port and dry ports upon invitation by them.

On the other hand, dry port respondents mentioned how they collaborate with stakeholders. According to NHS,

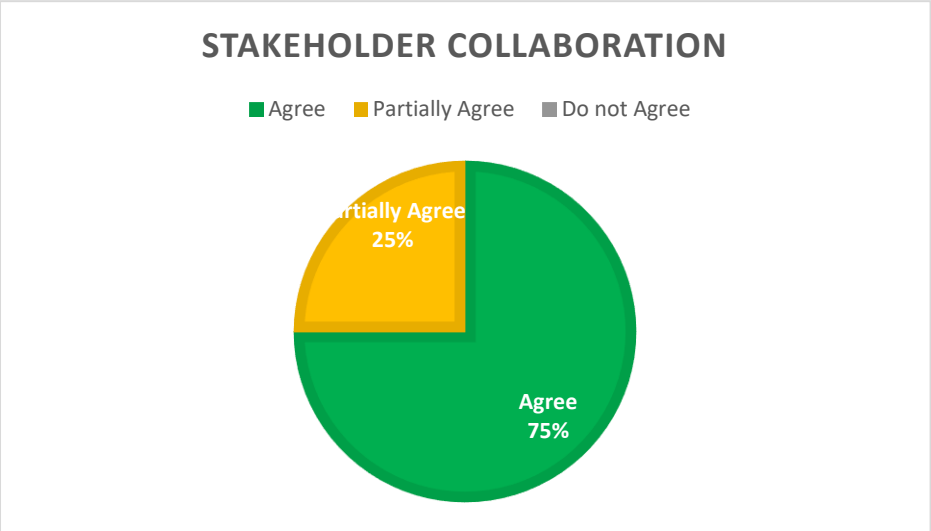
> We attend business and industry-related meetings jointly with stakeholders like Namport and the Walvis Bay Corridor group to promote the Zimbabwe dry port on an annual basis, and we are part and parcel of the logistics hub initiative working group. So yes, we do collaborate with the relevant stakeholders regularly.

However, CLOF respondent expressed a diffrent view. According to the respondent,

> To a certain extent, the dry ports are trying to collaborate, but under the current configuration, it makes it difficult for them to run or operate as a dry port should. They should be more proactive in collaboration with all parties. Now they are operating more like depots, not as dry ports.

Figure 17:

Views on collaboration with stakeholders



5.2. Category of Namibian Dry Ports:

As Figure 5 illustrates, the Dry Ports within the Port of Walvis Bay deviate from the conventional global dry port model, representing a novel concept. The NAMRA respondent emphasized the novelty of this Namibian dry ports category.

"Namibian dry ports follow a completely unconventional location strategy. However, in my opinion, the most efficient location and viable option would have been away from the main port."

5.3. Namibian Dry Ports Implementation:

The primary aim behind the establishment of the Namibian dry ports was to harness the country's strategic geographical advantage as a logistics conduit for landlocked nations. The respondent from MOWT stated the implementation purpose of Namibian Dry Ports. ***"****The main purpose of the implementation of Namibian dry ports was to attract more cargo volumes from the neighboring landlocked countries."*

5.4. Summary of the Finding

Below is a summary of the data gathered from interviews which reveal the insights into the perspectives of the respondents.

A significant majority, comprising 75% of the respondents, expressed dissatisfaction with the current location of the dry port within the Walvis Bay port. Only a quarter, or 25%, considered the current location to be ideal.

Regarding the connectivity of dry ports with road and rail infrastructure, 50% of respondents held a somewhat positive view, while 37% were entirely convinced of seamless intermodal connectivity. However, 13% of respondents disagreed, asserting the absence of such connectivity.

The provision of customs clearance services at the dry ports garnered limited support, with a substantial 88% of respondents believing that these services are unavailable. In contrast, only 12% affirmed the existence of customs clearance services.

In terms of container handling services, half of the respondents, or 50%, expressed satisfaction, followed by 37% who found the services moderately acceptable. A minority of 13% rated these services negatively.

Half of the respondents, or 50%, believed that the dry ports offer competent logistics and distribution services. Another 25% held a moderate view on this aspect, while the remaining 25% considered the services substandard or non-existent.

A substantial portion of respondents, constituting 63% of the sample, expressed unequivocal support for the presence of necessary infrastructure and the effective utilization of technology at the dry ports. An additional 37% of the respondents offered somewhat supportive views on this matter.

A majority of 50% of respondents believed that the dry ports possess the necessary capabilities to facilitate trade effectively. An additional 25% were slightly in favour of this notion, while 25% disagreed, indicating a lack of confidence in the dry ports trade facilitation capacity.

In terms of government support, 50% of respondents acknowledged its presence, with an additional 25 percent expressing support but with reservations. Conversely, 25% of respondents opposed the idea of government support for dry ports.

The majority, comprising 75 percent of respondents, acknowledged that dry ports collaborate with industry stakeholders. Another 25 percent supported this view with reservations

Chapter 6

Discussion of Findings

6.1. Dry Ports Elements

6.1.1. Dry port location

In terms of location, the findings indicate a divergence in perspectives regarding the ideal location of the dry ports. The stakeholders, namely Namport, SEARAIL, WBCG, NAMRA, WBPUA, and CLOF shared a common view that the location is not ideal. This lines up with the statement of Nguyen & Notteboom (2018), which pointed out that dry ports are rarely found near seaports especially in developing economies. On the other hand, the MOWT and NHS mentioned that the dry port location is indeed ideal. One possible reason for the respondents holding this perspective could be that the concept of a dry port is relatively new in Namibia. Because of this novelty, the specific location might not be the foremost priority for them.

6.1.2. Intermodal Connectivity

The respondents shared varying opinions regarding the intermodal connectivity of the dry ports. A significant number, including CLOF, NHS, WBCG, and WBPUA, expressed partial agreement that the dry ports are linked to the existing transportation system. This perspective might be influenced by their recognition of the shortcomings in the country's transportation network and the dominance of road transportation.

However, the MOWT and SEARAIL held the perspective that the dry ports have comprehensive connectivity with the existing transportation infrastructure in Namibia. MOWT's standpoint might be grounded on the presence of both road and rail connections that link the main port, providing access to the dry ports. SEARAIL's viewpoint could be attributed to the road connection from the port to Botswana and the railway line that extends from the port's rail system, reaching as far as 582 kilometers before the Botswana border.

However, Namport strongly disagreed with the notion that the dry ports are fully connected. The views of Namport align with findings in the literature, as highlighted by Roso and Lumsden (2010), who affirmed that intermodal connectivity hinges on the seamless integration of various transportation modes, such as sea, rail, road, and sometimes air. Additionally, Crockford (2022) emphasized that for a dry port to be considered part of the supply chain, transportation must be intermodal.

6.1.3. Container Handling Facilities

Notably, Namport, SEARAIL, WBCG, and NAMRA expressed satisfaction with the quality of container handling services and equipment at the dry ports. Their viewpoints likely stem from their significant roles and active participation in the dry port operations. For instance, Namport serves as the host for the dry ports, NAMRA is responsible for regulatory oversight, WBCG facilitates trade with landlocked nations, and SEARAIL manages the Botswana dry port.

It is noteworthy that the majority of respondents' views align with prevailing literature, as noted by Roso (2008), who emphasizes the recognized potential of dry ports in reducing transportation and storage expenses, minimizing transit times, improving service quality, and optimizing overall supply chain efficiency through effective container handling.

CLOF, WBPUA, and MOWT conveyed a sense of partial satisfaction, possibly rooted in the anticipation that the dry port should possess essential equipment and offer services on par with those of the main port. NHS expressed dissatisfaction, perhaps because, as the operator of the Zimbabwe dry port, they lack the essential equipment required for container handling.

6.1.4. Logistics Services

The majority of respondents, including SEARAIL, NHS, MOWT, and WBCG, agree that the logistics services at the dry ports are satisfactory. Notably, SEARAIL and NHS, as dry port operators, share this view, which is expected given their direct

involvement in providing these services. These findings align with previous research, such as Varese et al. in 2020, which highlights the crucial role of dry ports as hubs facilitating the movement of goods between seaports and inland areas. Dry ports offer various services like coordinating shipping, storage, customs clearance, value-added services, and logistics management. These services collectively enable dry ports to function effectively as vital components of the broader supply chain network, as emphasized by Roso in 2008.

Conversely, NAMRA and CLOF indicated a level of partial contentment with the logistics services provided at the dry ports. Their perspectives likely stem from their awareness of the constraints that hinder dry ports from delivering comprehensive logistics services, primarily due to existing regulations. Meanwhile, WBPUA held the opinion that the logistics services provided are unsatisfactory. The possible reason for this viewpoint shared by WBPUA may be grounded on their level of expertise, which is superior compared to the dry port operators.

6.1.5. Infrastructure and Technology

The majority of respondents, including Namport, SEARAIL, NHS, WBCG, and CLOF, expressed similar perspectives regarding the condition of infrastructure and technology, indicating a level of partial satisfaction. These views likely stem from them closely following the developments at the dry ports and regularly engaging them for possible collaborations, which allows them to access information on the capacities and capabilities of the dry ports. The findings of the majority thus align with scholarly discourse, as elucidated by Naseer (2022), who underscores the pivotal role of technology and robust infrastructure in the efficient and effective management of dry ports.

WBPUA, MOWT, and NAMRA regarded the technology and infrastructure as satisfactory. WBPUA's perspective may be attributed to their evaluation of the available infrastructure and technology at the Botswana dry port, which is considered the closest to having both physical and technological capabilities. As for MOWT, their

view might be influenced by their location outside of Walvis Bay, potentially limiting their awareness of the current state of infrastructure and technology at the dry ports.

6.1.6. Trade facilitation

The findings highlight a consensus among the majority of respondents, which notably includes SEARAIL, NHS, MOWT, and WBCG, that the dry ports actively and comprehensively engage in facilitating trade. This shared perspective among dry port operators naturally aligns with their primary mandates, which inherently encompass trade facilitation. WBCG's position may be grounded on its crucial role in advancing trade between Namibia and its neighbours. Likewise, MOWT's viewpoint may be shaped by the expectation that the dry ports should play a proactive role in trade facilitation, especially in handling cargo bound for their respective countries. This consensus mirrors the insights from existing literature, as exemplified by Roso et al. in 2009, which underscores that within the context of ports and dry ports, trade facilitation encompasses a spectrum of activities. These include streamlining administrative procedures, enhancing infrastructure and services, and fostering collaboration and coordination among port users and stakeholders.

CLOF and WBPUA, on the other hand, adopted an opposite viewpoint stating that the dry port might not possess the necessary capacity to successfully facilitate trade. Their innovative roles in enticing cargo volumes to the port and their significant contribution to trade facilitation are probably the origin of this viewpoint.

6.1.7. Government Support

The prevailing sentiment among the majority of respondents is that the government indeed extends support to the dry ports. This perspective is in alignment with the views of government entities like Namport, MOWT, NAMRA, and WBCG, which is likely a result of their regular interactions with the dry ports. Additionally, the provision of concessions, exemptions, and referrals for cargo imports and exports contributes to this perception.

This concurrence with government support is corroborated by research findings, as indicated by Beresford et al. in 2012. The study highlights the positive impact of government interventions, including land subsidies, specialized customs policies, concession policies, tax exemptions, and rent reductions, on the development and operation of dry ports. This connection underscores the significance of government involvement in facilitating the functioning of dry ports, as supported by the experiences of the surveyed stakeholders.

In contrast, the operators of the dry ports, specifically SEARAIL and NHS, had differing opinions, contending that they do not receive government support. Their perspectives may be based on their expectations that the customs procedures and regulations governing dry ports may be outdated, thereby hindering their operations and limiting their ability to reach their full potential.

6.1.8. Stakeholder Collaborations

The research findings reveal a strong consensus among the respondents, including key stakeholders such as Namport, NAMRA, MOWT, WBCG, SEARAIL, and NHS, who firmly believe that the dry ports engage in effective collaborations with relevant players in the logistics sector. This shared perspective is rooted in the common practice of these stakeholders accompanying dry port operators during promotional trips to showcase the Port of Walvis Bay and the dry ports in the countries they serve. Furthermore, their collaborative efforts extend to efficiently managing cargo between the primary port and the dry ports.

This alignment with the concept of collaborative engagement corresponds with the findings of Beresford et al. (2012). They emphasized the importance of providing support to dry port operators, particularly in enhancing their connections across various administrative sectors. It is worth noting that special attention should be directed toward private dry port operators, as their limited political influence can pose challenges in maintaining effective relationships with customs, seaports, and logistics companies. This connection highlights the significance of fostering collaboration to

overcome potential hurdles in dry port operations, as underscored by Beresford et al. (2012).

On the flip side, CLOF and WBPUA partially concurred, indicating that they have reservations about the dry ports being adequately proactive in collaborating with the stakeholders. Their viewpoint may be rooted in the perception that the dry ports' involvement in the industry is not as prominent or noticeable among stakeholders as they are not actively involved in attracting cargo, which usually requires collaboration with logistics service providers.

6.2. Category of Namibian Dry Ports:

The findings reveal that Namibian dry ports, situated within the Port of Walvis Bay, depart significantly from the traditional global dry port model, introducing a unique approach. According to Crockford (2022), close dry ports are usually located near the seaport, within a radius of 50 km, allowing for quick transfer of cargo.
The Namibian dry ports exhibit a near alignment with the 'close dry port' category, although they do not fully adhere to this classification due to their location within the main ports, rather than being situated at a distance, as typically characterized by close dry ports.

5.3. Namibian Dry Ports Implementation:

The research findings underscore that Namibia's primary objective in establishing dry ports was to leverage its strategic geographic position as a conduit for landlocked neighboring countries. This aligns with the statement from the Ministry of Works and Transport (MOWT) respondent, who explicitly confirmed that the core purpose of Namibian dry ports is to attract increased cargo traffic from these nearby landlocked nations.
According to Jaržemskis & Vasiliausk (2010) Namibia hosts dry ports situated inside the Port of Walvis Bay, designated to provide landlocked countries such as Botswana, Zimbabwe, and Zambia access to international trade routes through the Atlantic Ocean.

This initiative aligns with Namibia's broader goals of fostering regional economic integration and enhancing its competitiveness as a trade and logistics hub in Southern Africa.

The findings revealed a diversity of perspectives amongst stakeholders, shedding light on various aspects of dry port operations in Namibia.

Regarding dry port location, stakeholders held differing opinions, with some considering the current location unfavourable while others found it suitable. This divergence might be attributed to the uniqueness of the dry port concept in Namibia and varying priorities among the stakeholders.

Intermodal connectivity presented another area of disparity, with some stakeholders perceiving partial connectivity and reliance on road transport while others emphasize comprehensive connectivity involving both road and rail infrastructure.

Container handling services generally received positive feedback, with stakeholders expressing satisfaction, although some identified room for improvement. Logistics services were deemed satisfactory by most respondents aligning with the vital role of dry ports in facilitating trade and logistics operations.

Infrastructure and technology were viewed as partially satisfactory, reflecting the ongoing developments and potential for further technological advancements. Trade facilitation was seen as a core function of dry ports by many stakeholders, although some expressed reservations about their capacity in this regard.

Government support was acknowledged by most stakeholders, emphasizing the importance of policies and concessions in promoting dry port activities. Collaboration with stakeholders was generally viewed positively, highlighting the joint effort to promote the PWB and dry ports.

The findings demonstrate that Namibian dry ports, situated within the Port of Walvis Bay, deviate significantly from the traditional global dry port model by adopting a unique approach. While they share proximity characteristics with 'close dry ports,'

their distinctiveness lies in their integration within the main port, a departure from the usual distance-based positioning of close dry ports.

The key objective in establishing dry ports in Namibia was to exploit its strategic geographic location to serve as a gateway for neighbouring landlocked countries, thus stimulating greater cargo flow with the aim of fostering regional economic integration and enhancing its role as a competitive trade and logistics hub in Southern Africa.

In addressing the research question, it is evident that the Namibian dry ports demonstrate both alignment and divergence from international benchmarks for dry port classification. While certain aspects, such as container handling and logistics service, align well, there are disparities in location preference, intermodal connectivity, and trade facilitation capacity which are not aligned.

Chapter 7

Conclusion

This dissertation embarked on a comprehensive exploration of the unique concept of dry ports within the specific context of Namibia's PWB. It sought to answer a fundamental research question: Can the dry ports located within the port of Walvis Bay be accurately classified as dry ports based on established criteria, given the unconventional positioning within the confines of a seaport? Through a qualitative research approach that included in-depth interviews with 8 key stakeholders, the study uncovered a rich tapestry of perspectives and insights shedding light on various dimensions of dry port operations in Namibia.

The discussion of findings has revealed that while Namibia's dry ports excel in certain areas, such as container handling and logistics services, there are notable disparities in other critical aspects. The contentious issue of dry port location, for instance, underscores the unique challenges faced by Namibia in adapting to the dry port's specific needs. The varying opinions on intermodal connectivity and trade facilitation capacity also highlight areas where improvements could be made to align more closely with international standards.

Despite these disparities, it is important to recognize that Namibia's dry ports have made significant progress and have garnered support from various stakeholders, including government agencies, port authorities, and private operators. The collaboration among these stakeholders is a positive sign for the future development of the dry ports in Namibia.

In conclusion, Namibian dry ports, situated within the PWB, exhibit a departure from the traditional global dry port model by integrating within the main ports, distinguishing them from the usual distance-based 'close dry ports.' The primary aim of these dry ports is to capitalize on Namibia's strategic geographical advantage, acting as a conduit for landlocked neighbouring countries to promote increased cargo

flow, regional economic integration, and the consolidation of Namibia's position as a competitive trade and logistics hub in Southern Africa.

In moving forward, it is recommended that Namibia continues to assess and adapt the dry ports to better align with international benchmarks, particularly in terms of location optimization, intermodal connectivity, and trade facilitation capacity. This may involve revisiting regulatory frameworks, advocating for infrastructure investments and developments, and fostering closer collaboration with neighbouring countries and international partners.

Overall, this dissertation contributes valuable insights into the evolving landscape of dry port operations in Namibia and provides a foundation for future research and policy development in the realm of international trade and logistics. The lessons learned from Namibia's experience with dry ports can serve as a valuable reference for other countries looking to enhance their logistics infrastructure and facilitate trade in an increasingly interconnected global economy.

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Appendix

Interview Questions Guidelines

Interview questions to Namport, Dry Port Operators, WBCG, Government Agencies (Ministry of Works and Transport, and NAMRA), CLOF and WBPUA

1. To what extent do you perceive the Namibian Dry port concept to align with the established international benchmarks and criteria for designating a logistics node as a dry port?

Prompts on Dry port elements	a. Location/Category b. Intermodal Connectivity c. Customs and Documentation Services d. Container Handling Facilities e. Logistics and Distribution Services f. Infrastructure and Technology g. Trade Facilitation h. Government Support and Policy i. Collaboration and Stakeholder Involvement

2. Are there any notable aspects of this alignment that you would like to highlight?