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Exploratory Study of the Dry Port Service in Ethiopian Context: The Case of Addis Ababa Dry Port Kaliti Branch

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Addis Ababa University
School of Commerce
Department of Logistics and Supply Chain Management
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Exploratory Study on Dry Port Service in Ethiopian Context: Case of Addis Ababa Kality Dry Port Branch

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A thesis submitted to the School of Commerce Addis Ababa University in partial fulfillment of the requirements for the degree of Master of Arts in Logistics and Supply Chain Management

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Declaration

I, Hiwot Tadesse, announce this research paper entitled “Exploratory Study on Dry Port Service in Ethiopian Context: Case of Addis Ababa Kality Dry Port Branch” is my own and I dare to say original research work that has not been produced by others in any other universities for any other requirements in any form. To this end, I acknowledged all sources of information that I used to produce the study appropriately and I would say perfectly.

Declared by

Hiwot Tadesse	_____	_____
Student Researcher	Signature	Date

Letter of Certification

This to certify that Hiwot Tadesse has carried out her thesis work on the topic entitled "Exploratory Study on Dry Port Service in Ethiopian Context: Case of Addis Ababa Kality Dry Port Branch" under my guidance and supervision. Accordingly, I here assure that her work is appropriate and standard enough to be submitted for the award of Master of Arts in Logistics and Supply Chain Management.

Mathewos Ensermu (Ph.D.)

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Research Advisor	Signature	Date

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Hiwot Tadesse

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Abbreviations

CCTV	Closed circuit television
GDP	Gross Domestic Product
ICD	Inland Container Depot
IDI	In depth Interview
PPP	Public private partnership
SWOT	Strength, weakness, opportunity, Treat
TEU	Twenty-foot equivalent unit
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UK	United Kingdom

Abstract

A dry port is a recent phenomenon in the Ethiopian logistics history. The Addis Ababa dry port Kaliti branch is among the youngest dry ports established in Ethiopia. It was officially called a dry port in 2014 to facilitate entry and exit of goods from different ports. Customers using the port, however, complain that the port does not deliver an efficient service to its clients. The focus of this paper is to explore issues that could hinder the efficient service delivery. By employing qualitative approaches, the researcher conducted In-depth Interviews with both employees and clients of the dry port. Moreover, site observation was made to explore the current facilities of the dry port and compare it with other dry ports. Customers indicated that, the human resource of the dry port is not equipped with the necessary dry port knowledge as being the dry port a recent phenomenon in Ethiopia there is shortage of professionals who have the knowledge of logistics activities. Most employees get familiar with their current duties by experience and short term trainings given by the organizations. Though the current facility has enough space, there were no adequate offices for both employees and other stakeholders of the organization and warehouse facilities. Most participants agree that not using modern information technologies has not made the dry port as competitive as other dry ports. There was a difference of opinion on the current governance of the dry port between the study participants that few respondents say that being a public enterprise didn't hinder the dry port to operate efficiently but the study revealed that most facilities are not fulfilled by budget constraints and other related management issues of the dry port. Based on the findings, there is a lot to be done on both in infrastructure and human power so that the dry port would be competitive and deliver a quality service to all its customers.

Chapter One: Introduction

1.1 Back Ground of the Study

In the current globalized and competitive world, countries are forced to use modern logistics system including better infrastructures, skilled manpower, and improved technologies to deliver efficient service to meet the demands of their customers.

Because of their vicinity to port, maritime transit countries have better access to the world market, and are thus in better economic situations than most landlocked countries, of which most are found in developing nations.

Trade in landlocked countries is less by an average 30 % (Irwin and Terviö, 2002) compared to maritime countries and thus experience weaker economic growth (Venables and Limao, 1999). One reason for this slower growth is the huge amount of cost incurred for handling their import and export commodities by their neighboring maritime. According to the World Bank business report 2013, the average cost of exporting a container has increased from $2220 in 2006 to $3000 in 2013 (Assefa, 2013). Maritime countries spend only 50 % of the money they receive from landlocked countries, and most of it is being paid to for the extended storage. This problem has forced landlocked countries to build dry ports in their respective land so that items are cleared as fast possible from the port and stored until they are distributed to their owners.

The concept of dry port is more often used in practice while being given scientific attention in 1982 the UN first used the term to underline the integration of services with different modes under one contract (Beresford et al., 2012). Dry ports are located inland but are linked directly to the sea ports or are in contact with the sources of imports and destination of exports. They may be used whether it has sea ports or is landlocked, but only surface modes of transport are involved in giving access to them.

Well-built dry port should ideally have a big compound with a security cordon. And it should also include temporary storage for import and export cargoes. Both existing customs and clearance facilities as well as specific facilities built for the purpose may be designated as dry ports. There must be a common user facility that it is accessible to all shippers either directly or through their agents.

Ethiopia is one of the landlocked developing countries which employ the dry port system. The country has been using the ports Assab and Massaw until the Ethio-Eretria war, which broke in 1998. Since then, Ethiopia stopped using these ports and started to use the port of Djibouti as its main port (Debela, 2013). The port of Djibouti has a capacity of 400,000 TEU's and handles 800,000 units of container (Shabandri, 2013). More than 70 percent of the port of Djibouti handles Ethiopia's commodities. Ethiopia Uses port of Djibouti to handle 90percent of the country's import and export commodities. For this service, the country pays more than $700 million annually for demurrage. Moreover, the average staying time of containers at the Djibouti port has also been brought down from 45 to 10 days This has prompted the Ethiopian government to establish dry ports in the various parts of the country.

The first dry ports in Ethiopia was established at Modjo, nearly 75 km East of Addis Ababa, and started operations in the first half of 2009. The port has a capacity to handle 6,000 containers, measuring 20-ft (six meters), on 2012. Currently there are six additional dry ports operating to handle shipment from ports. These are Semera, Gelan, Diredawa, Komolcha, Mekele, and Kaliti Branches. All of these ports connect to Djibouti and were built with the Purposes of providing receiving and delivering cargoes, loading and unloading, stuffing and unstuffing of container goods, temporary storage for import and export cargoes, container cleaning and maintaining, weight bridge, customs control and clearance, banking and insurance, container depot service and engage in other related activities conducive to the achievement of its purposes. And this move has helped the country to save the foreign currency and increased its efficiency in import and export operation

From currently operating dry ports in Ethiopia the Addis Ababa Kaliti branch officially started working as a dry port on November 2014. It has now 250 employees out of which 200 of the employees are laborers who are responsible for loading and unloading of shipments. Currently the Addis Ababa Kality Branch dry port handles 19,858 TEUs per year.

The establishment of these dry ports has saved the country millions of foreign currencies and increased its efficiency in import and export operation. However, customers of the Addis Ababa dry port have expressed complaints about the efficiency and effectiveness of the port, saying that it affects their competitiveness in the international trade. Some of the complaints include poor

trade logistics, reduced free time for imported cargo, and unavailability of empty containers and enough storage facilities. In addition, customs clearance delay was also one of the issue affecting their performance. Customs clearance delay had also exacerbated the congestion in Djibouti port apart from the problem that might arise from lack of harmonization among the employees of the dry port remain the major challenges that escalated Ethiopia's total logistics costs for its imports and export trade which affected the country's competitiveness in the international market.

The objective of this work is to explore the factor that affect the Addis Ababa dry port service from providing efficient and effective logistics systems. Specifically, the human resource capacity, infrastructure and governance of the dry port were explored in detail by conducting in-depth interviews with different stakeholders (freight forwarders and employees of the Addis Ababa dry port). Qualitative assessment of the site was conducted, in addition, secondary sources (books, articles, newspapers) was used to state the findings and results of the research

1.2. Statement of the Problem

Many factors influence efficient delivery of services in dry ports. Some of the factors are poor infrastructural facilities, location of the dry port, governance, lack of educated and experienced human power. In addition to the above mentioned factors a well and structured ICT infrastructures could also play a great role for efficient service delivery of a dry port.

More often, customers of the Addis Ababa dry port complained that they are not getting quality service. This paper tries to explore factors that might possibly hinder the efficient operation of the Addis Ababa dry port and will be a base for other studies that look for solution in the future.

1.3 Research Questions

This research explores factors that could hinder the service delivery of the Addis Ababa dry port. In such circumstance, the following research questions were developed as guideline for the study.

- Is the current human power capable to undertake the needed dry port tasks?
- Are the physical infrastructures of the dry port constructed and fulfilled to deliver a competitive service to its clients?
- Is the current governance of the dry port is managing the operation as anticipated?

1.4. Objective of the Study

General Objective

- To explore factors that could hinder the efficiency of the Addis Ababa dry port service.

Specific Objectives

- To explore the physical infrastructure of the Addis Ababa dry port
- To explore the human resource capacity at Addis Ababa dry port
- To explore regulatory and governance system of the Addis Ababa dry port

1.5. Significance of the study

Dry port concept is a recent phenomenon to Ethiopia. As a result, new problems might arise that can affect effectiveness and efficiency of dry ports in the country. Identifying such challenges at the Addis Ababa dry port can facilitate shipment-clearing time, and thus, can potentially reduce associated costs. Based on the research findings, government and other concerned bodies can implement corrective actions to improve service to their customers. The study can also be used as a reference for other researchers who would like to conduct further studies at Addis Ababa dry port.

1.6. Limitation of the study

The study used exploratory research design. It enables the researcher to identify the challenges and prospects facing the Addis Ababa dry port in terms of service delivery. The study is limited to one dry port and the conclusion drawn from the study can may not be generalizable to other dry ports in Ethiopia. Another limitation of this study is related to the sampling technique used. The researcher used non-probability sampling and this has risk of sample being unrepresentative of the population but care has been taken in selecting individuals who can provide accurate information.

1.7. Delimitation of the study

This study is delimited to exploring factors that could hinder the service delivery of the Addis Ababa dry port operation by considering the human power, physical infrastructure and current governance of the organization.

Chapter Two: Review of Literature

The container shipping industry has improved its performance at an impressive pace since 1960 (Roso et al., 2009). This accounts 13% of sea borne trade in volume and 49% by value (Cullinane and Khanna, 2000). Its importance for the ongoing space/time fall relates more to cost reductions than to increased speed (Rodrigue, 1999). The maritime part of the intermodal transport chains has employed ever larger ships to cope with increasing transport demand and for facilitating lower unit costs (Cullinane and Khanna, 2000). With the latest vessels on order reaching 14,000 TEU (World Cargo News, 2006), progress in ports and hinterland operations must improve similarly to fully realize the economies of scale (McCalla, 2007).

Despite heavy investments in container terminal capacity, larger ships and larger flows of containers severely strain seaport operations (McCalla, 2007, Mourão et al., 2002). Port capacity can be increased by physically expanding existing ones (McCalla, 2007), but this is at considerable cost and effort (McCalla, 2007, Mourão et al., 2002). Other options include adding conventional equipment or improving the productivity by new forms of technology (Ballis et al., 1997), work organization (Paixão and Marlow, 2003) or establishing dry port.

2.1 Dry Port: Definition

The term "dry port" has been in use for decades and is defined differently by various experts. For example, Roso et al., defined dry port as an inland intermodal terminal directly connected to seaport(s) with high capacity transport mean(s), where customers can leave/pick up their standardized units as if directly to a seaport (Roso, 2009). Several definitions can be found in literature that describe the dry port concept as an inland intermodal terminal that is directly connected via rail and/or truck to one or more water ports, and which can substitute certain port services in certain areas. The authors stressed that the main aim of establishing a dry port is to perform certain container handling operations that have undesirable temporal and financial implications when done at a congested seaport. Additionally, to the basic services, trans-shipment, that a conventional inland terminal provides, such services as freight storage, consolidation, storage of empty containers, maintenance and repair of containers, customs clearance, and other services should be available at full-service (Roso et al., 2006).

The definition suggested by United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP, 2006) describes similarly, yet more detailed concept as follows (UNESCAP, 2006):

> *Dry Port* refers to *a defined inland location for the consolidation and distribution of goods that has functions similar to those of a seaport, and which includes customs clearance services. Seaport functions that could be expected to be typically present at these dry ports include container (and possibly bulk) handling facilities; intermodal infrastructure connections; a geographical grouping of independent companies and bodies dealing with freight transport (including, for example, freight forwarders, shippers and transport operators); and the provision of accompanying services such as customs inspections, tax payment, storage, maintenance and repair, banking and information communication technology connections.*

Furthermore, it is necessary to highlight that dry ports are existing as the mean for organizational and business strategies in a logistics chain:

> *"Dry Ports might be considered as "extended gates" for seaports, through which transport flows can be better controlled and adjusted to match conditions in the port itself. Thus the terminals can help to improve land access to ports in both physical and psychological terms. This means that a "dry port" is more related to the organization and the service and business needs of the transport system, than related to a physical plant" (InterBaltic, 2008).*

According to Zimmer et al., an ideal terminal is not a certain physical configuration of pavement and tracks, but an organization of services integrated with a physical plant that meets the business needs of a specific marketplace (Zimmer, 1996). These physical plants may take many forms, which are influenced by the characteristics of the landscape, their proximity to the seaport or major industrial complex, their location relative to the main rail infrastructure, and their distance from the country's highway network. This conscious and strategic development of intermodal terminals in the hinterland is approaching what we denote as dry ports (Roso, 2009).

To generalize the main idea of a dry port concept and to have the leading definition, based on earlier research on the terminal facilities using the dry port notion, the following definition was formed by Leveque and Roso (Leveque and Roso, 2002).

> *A dry port is an inland intermodal terminal directly connected to seaport(s) with high capacity transport mean(s), where customers can leave/pick up their standardized units as if directly to a seaport. (Roso et al., 2009).*

2.2. Drivers for the emergence of the Dry Port concept

The dry port has evolved from the development of global transport strategies. The transport systems are limited in their capacity that the nation is forced to have an efficient and effective port to handle the flow of goods. The other driver for the emergent of dry port is road congestion problem that the duration of the time to transport one item from one nation to another is high and the vehicles consume more fuel in the process and in turn the cost of the goods rise as well. let alone the emission of co_2 to the environment because of road congestion. So to alleviate this capacity, environmental and road congestion issues, the intermodal concepts evolved first and the dry port later (Gujar and Yan, 2010).

2.3. Functions of the Dry Port

Dry Ports can be built from scratch or it may be developed from an inland terminal including some additional facilities that are characteristic for dry ports. If an inland terminal fulfils the following conditions, it can be theoretically counted to be a dry port:

- The terminal should have direct connection to a seaport either by rail or by road;
- The terminal should have a high capacity traffic mode (i.e. rail);
- The terminal should offer the same types of facilities as can be found in a seaport.

The main objectives of a dry port are:

- To function as an extra hinterland space for the port/ports and a terminal, where the port can outsource its functions;
- To act as a high quality terminal while improving the efficiency and effectiveness of the logistics chain;
- To promote a modal shift.

In order to implement these objectives, the following functions should be performed in a terminal:

1. ***Transshipment of cargo between different transportation means*** it requires having special equipment in a terminal to be able to transfer units from one mode to another. Good co-ordination of transshipment operations is necessary in order to make the operations less time-consuming. In the dry port case it is most often the shift from rail to road or vice-versa. In exceptional cases a dry port may also include a waterway connection, when the cargo from port to the dry port is shipped by barge. (Beresford and Dubey, 1990)
2. **Sorting** When the goods are transported by a ship, containers have to be sorted in the receiving port since a number of supply chains, which have different points of destination, are concentrated in one ship. However, in order to have more space in the port area, which is sometimes very congested, distribution functions of port can be outsourced to the inland terminal – dry port. In this way ports are enabled to limit the possible port-related diseconomies of scale appearing from the growing volume of maritime transshipment (Notteboom and Rodrigue, 2009).
3. ***Storing:*** it is mainly used for distribution service, then the goods are stored for a long time period. Moreover, the space in a dry port hinterland can be used for the long-term storage of empty containers and waiting units. When the goods are transshipped from one transport mode to another in a dry port, or the goods are supported by other services, they are stopped for a shorter period of time, short term storing is used. Storing service is very important for the transport networks as some regions naturally receive more containers than they send and vice versa. dry ports can thus be connected and used to regulate the imbalance of containers flows (Beresford and Dubey, 1990).
4. ***Management of container flows to different ports***. This function is relevant when a dry port has the connections and communication with several relatively close and the same type of ports (regarding the type of cargo they are handling). When one port at a certain time is too busy to accept the cargo, the shuttle train may be directed to a less congested port (Beresford and Dubey, 1990).
5. ***Consolidation of individual container flows*** The containers from different shippers can be transported to a dry port, loaded on one shuttle train and transported to the port or far inland destination, for example from Europe to the Far East (Beresford and Dubey, 1990).

6. ***Reduction of pre- and post-haulage of road transport and expansion of rail transport****;* dry ports are usually linked to the ports by rail. That brings the possibility to consolidate the goods from different shippers at a dry port and transport them further to the port by rail. In this way dry ports are promoting traffic on railways rather than roads, which could bring significant environmental benefits (Beresford and Dubey, 1990).
7. ***Offering special- and extra Services***-One of the most important special services is customs clearance. When it is done in a dry port instead of the seaport the *waiting* time is reduced in the port. Usually this time is long and causing congestion. Sorting, storing and management of container flows to different ports can actually only be fulfilled, when the port is congested. (Beresford and Dubey, 1990)

Maintenance of units is also counted as extra service. This service is more relevant if a dry port provides a storage of empty containers that gives enough time for the maintenance of the unit. Many other extra services may be provided in the dry port.

2.4. Value added services in Dry Ports

The concept of value-added services means such kind of services that are provided for their users and support the goods of these users by adding extra value (Trainaviciute, 2009). This characteristic describes dry port's ability to add value to the cargo through the services that it provides in order to facilitate the objectives of the supply chain system. Dry ports can form part of a value-driven chain while adding value to the goods passing through them. This involves adding value in the context of the different operations, services and capabilities that take place in a dry port environment including:

- Capacity to provide third- and fourth-party logistics
- Capacity to launch new tailored services
- Capacity to handle different types of cargo
- Capacity to handle dangerous types of cargo
- Ability to adopt to altering schedules
- The speed at which the dry port's management can take decisions on changing the schedules and speed on amending orders

- Variety of services in intermodal operations
- Capacity to convey cargo through the most diversified routes/modes at the least possible time to end-user's premises, Capacity to deliver tailored services to different market segments and to act as collaborative intermodal hub networks.

The added value that a dry port can provide depends on the type of added value services and the number of them, for example, how many services there is for adding value to cargoes, the flexibility of the dry port regarding customers' needs and the possible number of tailored services

2.5. Advantages of Dry Ports

According to Gujar and Yan (2010), the main transport network actors who are benefited from the dry port are illustrated below.

BENEFITS	**Freight forwarders**	**Shippers**	**Port authorities**	**Society**	**Road operators**	**Rail operators**
***Balance* between road and rail transport**				+		+
Shorter waiting *time* in port	+	+	+		+	
Reduced *road congestion*	+			+	+	
Prevention from increase in *environment* pollution				+		
***Strengthening* the sea *ports* role in transport chains**		+	+			
Reducing the use of *expensive areas in* the *port*			+			
Creation of *jobs*				+		

Table 1. The advantages that different actors can gain from the dry port (Adopted from (Gujar and Yan, 2010)

2.6. Governance of Dry Ports

Depending on owner ship and execution of operation, dry ports have two forms of terminal governance (Rodrigue and Notteboom, 2012). Ownership governance is subdivided into two:

public ownership where the public authority is carrying out investment infrastructure and plans future expansions and private owner ship.

Another component – operations – describes the execution of every day's activities in the terminal. Operations are usually implemented by different actors than the ones owning the terminal and that can be done also by both sectors:

- *Public* control of operations means that the public authority provides the handling equipment, deals with employees in the terminal, and operates the dry port terminal.
- *Private* companies can manage and perform operations in privately owned terminals or operate under concession agreement in publicly owned facilities (Rodrigue et al., 2010). In the latter case the facilities are leased to terminal operators for fixed periods of time and under certain conditions.

The possible options of governance modes of dry ports are illustrated below.

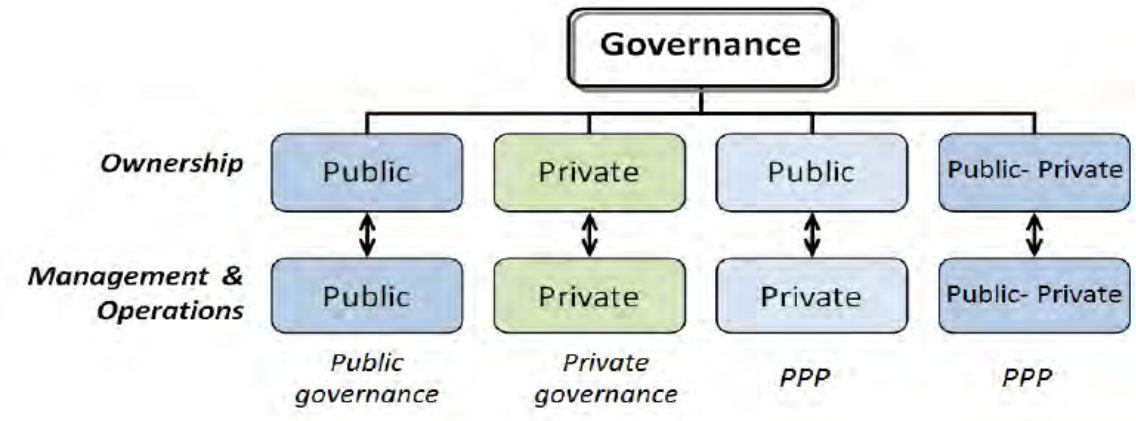

Figure 1: Governance modes of dry ports (Trainaviciute, 2009)

Depending on the initiator of dry port development and the body(ies) managing and operating the dry port, certain influence is made on the performance and future development of a dry port. Further, descriptions of possible dry port governance combinations are given.

Public governance: The expansion of transport terminals and other facilities are funded by the private sector that the government obtains the control over operations, revenues and transport modes. Thus it could create greater equality of treatment to all users.

The public ownership provides the shipping lines and foreign organizations with the assurance of greater security and fairness due to minimization of negligence, for example, profiteering, unreasonable tariffs, discrimination among user companies, etc. (Valentine, 1991).

Investment on terminals is a very important issue when considering ports and these investments in infrastructure could only be done by the public sector since the private sectors are unwilling and may not have the capability to do so.

The ownership and operation of transport terminals as public entity can be integrated with public regional and national economic policies. In this way the terminals can be owned and operated as public entity, and can be integrated with public regional and national economic policies. On the other hand, public facilities are often responding to market conditions too slowly (Valentine, 1991), for example, by keeping higher costs for services for the users, while competitors have lower costs, by suggesting limited number of services, while there is a demand for new services (Valentine, 1991).

The minus of only public regime may be related to the experience in business practice in comparison with the private experience. Moreover, the restriction in the efficiency of a dry port may appear. Additionally, the difficulties may appear in allocation of adequate funds through State treasury, while depending on existing national priorities. Public facilities are seen sometimes responding slowly to market conditions, tend to over-invest in non-economic developments, and have high costs to the users (Rodrigue and Notteboom, 2012).

Private governance: brings the significant advantage by investing private resources in the national transport infrastructure. Private management, implied by private investments, can sometimes provide with such benefits as greater flexibility and faster response to trade, especially concerning changes in tariff structure, quick response to changing patterns of operations and the supply of special needs on every day basis (Valentine, 1991). However, such drawbacks of private arrangement are known as larger risk of failure of a project and lack of control over prices.

Public private partnership: According to Rodrigue and Notteboom (2012), public facilities may respond slowly to the market, may also over invest in non-economic developments, with the high cost to users. unlike the public facilities private facilities are more efficient that they respond faster to the market.

Public-private partnership provides greater flexibility in development of a dry port in comparison with totally private governance. However, it can be reached only in case of the right way of making the initial agreement for forming the partnership. The rules set in the agreement should leave the possibility to change the type and form of relationship, as this will later give the opportunity to make new arrangement and implement new projects in relations to terminal and connecting infrastructure development. Moreover, financial justification of the project is significant, thus the important task for organization from public sector is to select the best investments, and the private sector usually puts effort to earning a reasonable return on investments (Valentine, 1991).

A report outlines such benefit of PPP as risks' distribution between the public partner and the private partner. The two combinations are possible for a funding form of public-private partnership:

- The public sector invests in some facilities, for example railhead and main container handling equipment, whereas the private sector provides other facilities, for example, warehousing facilities, etc.
- The public and private sectors provide the funds for a joint site operation under one management with unified control (Valentine, 1991).

Some other benefits and characteristics of cooperation between two sectors that are giving the reasons for applying PPP contracts in transport sector are outlined by FREIGHTWISE. They are related to both tangible and intangible resources:

Growing budget limitation on public side;

- Financial resources, technological resources
- Higher efficiency in management

Recognition of added value that private sector can bring;

- Know-how of the private firms;
- Transparency, public information and mutual shared information enabling future safe projects;
- The qualitative improvement of the project through the exchange of services provided and investment capacity;

- Exchanging technical, legal, financial competence between both sectors - public and private side;
- Higher security of the project in relation to technical, legal and financial aspects due to custom-made contractual framework which, depends on agreed financial estimates, including different stages of the project lifecycle; accelerated realization (10%-20%).

According to the previous descriptions of possible ways of ownership and management and their benefits and drawbacks, the table below is summarizing the most important aspects

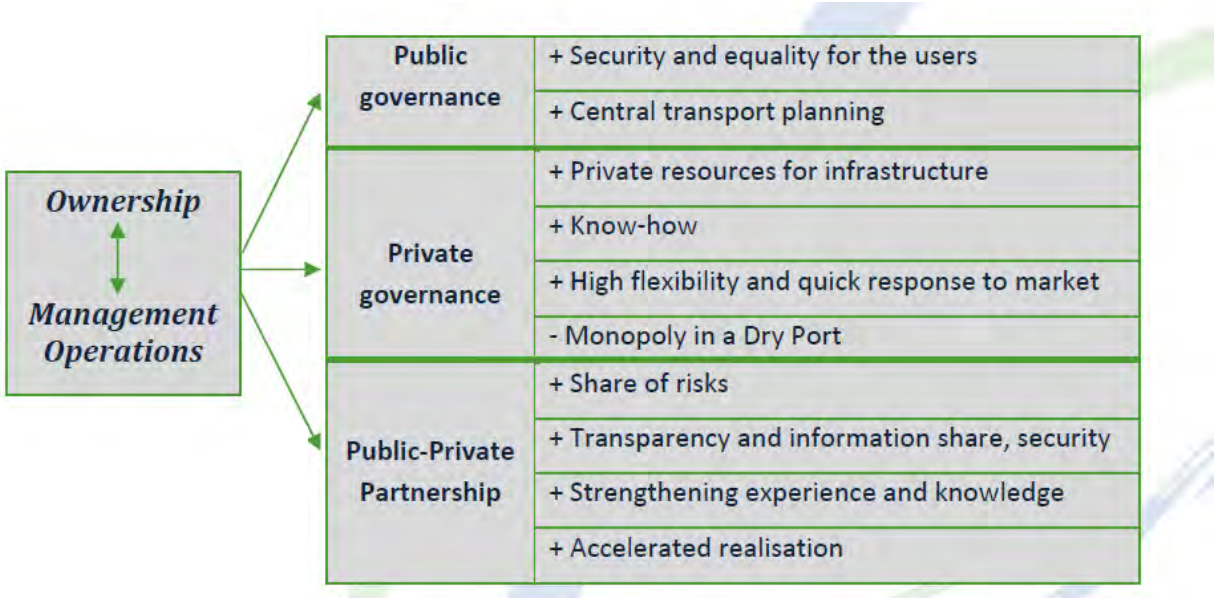

Figure 2. Main advantages and disadvantages of different forms of terminal governance. (Adopted from Trainaviciute (2009))

2.7. ICT use in dry port management

Currently information technology plays a great role for the flow of information in the supply chain. So members of the supply chain should utilize modern technologies for information sharing. Those updated or shared information have an impact on production scheduling, inventory control, and delivery plans of individual members in the supply chain. This in turn will help the logistics manager in planning, implementation and control of logistics activities. Moreover, customers could also benefit from these information technologies that they could easily access the location of their goods by using tracking technologies. So dry ports must be an integral part of a logistics chain for creation of efficiency and for implementation of lean operation in the dry ports that

utilization of information communication technologies is vital to link with other terminals as well as for managing the ports (Trainaviciute, 2009).

2.7.1. *ICT based logistics networks*

Several main advantages, giving new perspectives for the companies, can be gained with the establishment of network of the transport centers:

- New potentials given by the community of the transport center (or the dry port);
- Safe and quick communication and information exchange in the network;
- Possibility to implement new services due to cooperation;
- Cheap usage of new technologies and ICT supported services.

For achieving efficiency in logistics activities using improve and advanced technologies is one of the most important method that enables and ease the planning activities and shipment scheduling in advance. He also suggests several advantages of computer based information systems in transport chains:

- Improved management through tracking and tracing, together with more efficient control of own services and those of subcontractors;
- Outsourcing transport services, but staying in control of logistics performance;
- More accurate and transparent information on market demand and supply.

Since the logistics industry is dynamic it is important to implement systems that can be renewed and adapted to changes and the system should be optimal for both individual and joint usage. Moreover, technical characteristics should include individually or jointly usable toolboxes, open architecture and interfaces, high level availability and safety standards, finally, the ability to integrate existing information technologies should be evident.

The following example explains the case of ICT in German ports and illustrates the communication between different actors in logistics chains. Additionally, the example illustrates the complexity of communication in transport chains, which is simplified using communication technologies.

A consignor and a consignee negotiate a contract to deliver some goods, e.g. bags of peanuts, in a container. They share the responsibility of the transportation chain according FOB (Free on board), which is one of the thirteen incoterms. For the operation of the transportation chain they decide to

do it in own responsibility (Merchant Haulage). The consignor makes a contract with the forwarder A to transport the container to the export terminal (terminal A).

The consignee makes a contract with a shipping line and another forwarder (forwarder B) to operate the rest of the transportation chain. The shipping line offers the terminal operation to the consignee. He pays the terminal operation via the THC (Terminal handling charge) to the shipping line. The shipping line has a contract with the terminals for the handling operation.

2.7.2. ICT based operation management in Dry Ports

Information technology is one of the key means for reaching the efficiency in intermodal transport terminals, especially at large ones, as IT systems enable easier and advanced coordination and management of the complex transport operations. IT systems located in a piece of software are supporting the operations of intermodal terminal. This support generally is related to the road-side inbound and outbound clearance of intermodal shipments, the rail-side inbound and outbound clearance of trains, and the road/rail transshipments of loading units. The main aim of the installed terminal management system is to improve the quality and efficiency of terminal operators. Additionally, the real examples have revealed that it can help to increase the capacity by 5-10%. For example, a computer program is being used in the dry port of Madrid. This program enables the use of the wireless network in order to manage the traffic without documentation.

Mentioned facts witness that IT-based management systems would be undoubtedly valuable in a dry port implementation and could bring significant improvements in the whole transport chain, therefore it should be an incorporated element of fundamental equipment in a dry port.

2.8. Dry ports experience in different countries

2.8.1. West European Experience

Centrally located European countries like Belgium and Netherlands are more attractive for European distribution center that generates and adds 4-8 billion euro to their GDP by employing several workers. So for the Netherlands and Belgium, attracting relatively many of these EDCs, deliver clear net economic gains for the regions that attract them. The existence of these EDCs delivers a different kind of benefits. EDCs have a specific set of location preferences, of which (i) proximity to the market, (ii) good multimodal accessibility, (iii) a favorable fiscal climate and (iv)

a stable macro-economic and political context are the most important, besides cost levels and a well-educated (multilingual) labor force. The fact that over representation of these EDCs can be found in relative small economies like those of Flanders and the Netherlands can be explained from favorable scores on aforementioned location choice criteria.

The better these EDCs succeed in efficiently offering necessary services to the logistical supply chain, the more the European economy benefits:

- For the goods that are imported the efficiency gains eventually boil down to lower consumer prices and higher quality levels and availability of goods
- For the goods that are exported the efficiency gains result in lower integrated transportation and production costs, greater availability and higher quality of goods, thereby enforcing the competitive strength of the manufacturers in the global playing field.

Based on corridor analysis, trade volumes and availability of modes and connection possibilities, the European landscape of EDCs was projected. As can be seen, various sorts of (dry) ports were discerned, and put together in a logical and functional logistics network, that derives its strength from not only looking to optimal locations for ICD's in inland locations, but also taking into account future short sea shipping and other maritime transport opportunities.

Furthermore, when sea ports are facing congestion and efficiency problems appear, expanding the port area by the water may not be the only solution possible. With the implementation of the dry port concept, ports can obtain a great benefit due to the possibility to expand its hinterland into the inland areas, further away from the water, and hereby outsource some of the services to another terminal, for example, container storage, and distribution or customs clearance. With such a solution, ports are able to send out the freight from their territory quicker and thus emptying space for the newly incoming cargo. For example, in the case of the Netherlands, at the end of 20th century a realization of public policy, which was unfavorable for massive terminal expansion, was especially growing. Therefore, many operations were transferred from the Port of Rotterdam to the inland terminals. The terminal operators in the Port of Rotterdam and the port authority itself has established handling and storage facilities away from the city itself, due to the clear purpose of relieving congestion in the largest port of the Netherlands and Europe. For instance, many inland

terminals (also called satellites) were built at Moerdijk and Venlo. In the case of the Venlo area, distribution and logistics firms have been attracted to open intermediate wholesaling and distribution centers, which are linked by rail to the port of Rotterdam. That guaranteed traffic for the port and relieved space in the port area which is employed for a more essential transfer of activities.

The initiative for establishing the new dry port can be taken by the port authorities, even if the port is not facing congestion problem, or if the port authority simply sees the need to expand its market and attract more companies. Liege Trilogiport project in Belgium can be given as an example. It was initiated by the Liege Port Authority and was started to develop in 2007. Due to its determination to take part in the Liege region's economic restructuring process, the implementation of Trilogiport offers the advantages for the revitalization of the Lower Meuse Valley and the Liege region as a whole. Liege Trilogiport multimodal platform is a mean for the Liege Port Authority to accommodate new companies in the future, support the expansion of its river traffic, as well as stimulate the economic development of the Liege region. Considering that dry ports act as influencers on and supporter of the intermodality (the change of freight transportation from road to rail and short sea shipping), the implementation of this kind of transport terminal should help to reduce the transportation by roads and its harmful effect for the environment. Moreover, regarding the fact that the infrastructure of ports' terminals also has negative influence on environment, and therefore ports sometimes have no possibility to expand when they are lacking storage area, due to environmental restrictions, dry ports could be a solution. It would serve as a hinterland of a port, avoiding the expansion of the port's infrastructures by the waterside and water pollution together with other negative impacts for the environment.

2.8.2. China Experience

To manage growing demand of transport logistics service and increase its efficiency the government of china has introduced a directive entitled "Advisory opinions on ways to speed up the development of China's logistics" was introduced on 2001, by six ministries in China. The main function of the system is to accelerate the essential interaction and coordination among transport logistics enterprises, government agencies and relevant institutions at the national level. Intermodalism is at the core of most advanced logistics strategies used by the major transport

companies in the world. In order to meet the international demand for integrated logistics services, China needs to restructure its transport system through encouraging a modal shift from sustainable modes of transport-particularly road transport to environmentally modes. The development of Chinese dry port industry is just at the beginning stage. The first Chinese dry port was established in 2002 at Beijing as cooperation between Beijing Government and Tianjin Port. Since then, more dry ports have been established in different regions of China.

Influenced by major seaport of east coast of China, three groups of dry port are formed, located at the northeastern China, 12 provinces at middle and eastern China and the southern China. These three groups mainly contribute to Dalian Port, Tianjin Port and Ningbo and Shanghai Port respectfully. A Comparative Perspective on dry ports in India, China and Western Europe (Gujar and Yan, 2010).

2.8.3. Iran Experience

The main reasons to establish dry port in Iran was to manage and minimize air pollution, higher fuel consumption, noises, and road accidents created when freights are transported from the sea port to different destinations (Dadvar et al., 2011).

Using comprehensive literature review, questionnaires for experts for analyzing dry port implementation and then following many case studies the researcher determined a "base Case" for dry ports and performed comparative study upon its bases and summarized the result in a SWOT matrix format. Based on the SWOT analysis of overall, transportation cost, fuel consumption, air pollution; local environmental problems in the cities, empty containers movements are reduced. moreover, transportation network, seaports communication in the logistics and transportation chains, Security levels modes, Strengthening the ports in transport chains could be improved. Economies of scale in freight transportation could be gained by avoiding over storage and freight traffic in seaports by Speeding up the customs clearance process congestion. In addition, the implementation of dry ports can avoid traffic bottlenecks let alone the effects on Employment in rail transportation are identified as the strengths and helpful to achieving the objective of the dry port.

The weakness that are harmful for achieving the objective are identified as Inconsistency between decision makers in national, regional and local levels, and several related transportation sectors,

reductions of private sector to invest for facilities for long period projects, dependency to the freight traffic flows of a specific seaport (Shahid Rajaie port as the most important container port of Iran). Moreover, poor rail network and infrastructures, strengthening governmental role in rail transportation, leakage of proper facilities for container handling, loading and unloading in railway terminals and assignment of structural budget to other sectors are the weakness of the dry port.

The paper also identified as treats for the Iranian dry port to achieve its objective, overall economic crisis possibly inconsistency between several different sectors, critical problems related to contra band, unable and inappropriate infrastructures to achieve intermodal transportation needs, lack of intermodal transportation companies, International prohibitions. Increase for rail infrastructure development and maintenance costs, Light reduction activity for road carrier from/ to seaport(s), monopolization of private sector in management identified as threats that could hinder the efficient operation of a dry port.

As an Opportunity the country could get from the implementation of dry port are integrated port areas with cities, strengthening multimodal solutions, possible growth of commodities, new customers in existing market, new markets, new services, and new services for seaport up to increment of markets and potential markets in land-locked countries. Additionally, integrated management and development of seaport(s) can be gained. And removing irrelevant operations from seaport(s), road maintenance cost and road accidents as well as use of expensive areas in the seaport(s) can be reduced.

2.8.4. United Kingdom Experience

According to Garnwa et al. (2009), establishment of ICD's in United Kingdom had five restrictions

1. Depots should be located near trunk roads preferably with access to/ from main railway lines which would be met by any reasonable operator
2. They should be available for use by any intermodal operator using containers or vehicles;
3. They should be set up by broadly based consortia that a single company ownership ICDs were prohibited
4. They should be based on a spirit of cooperation rather than competition between modes.

ICD's in the United Kingdom are effective in encouraging the integration of port, road and rail freight operation, predominately private in terms of provision & funding facilities, with government. Participation is limited to the un flittered role of HM customs in ensuring cargo security and trade legitimacy moreover the road network in United Kingdom is comprehensive with many dual carriage way routes enabling road haulage to compete or corporate with railways for delivery of cargo. The deregulation of labor in the United Kingdom ports is another factor that has played a positive role in removing restrictive and archaic employment regulations and helped to create an environment which has allowed the introduction of a range of new and flexible employment practices. Security measures in the United Kingdom involve highly sophisticated systems, including movement sensitive infrared beams, closed-circuit Television (CCTV) surveillance and alarmed fencing. Vehicles and containers can also be X-rayed for contents validation. The provision of security measures in the United Kingdom is very expensive but such systems were installed for the protection of general cargoes, especially expensive sophisticated cargoes such as electronics, cigarettes and alcohol which can be the target of organized crime. ICDs in the United Kingdom are fully computerized with radio frequency identification (RFID) technology and on-line cargo tracking for efficiency of cargo flow from ports to ICDs. The upholding of environmental standards is one vital area that is taken into account when developing port or ICD projects in the United Kingdom. Elements such as waste, noise, dust, habitat loss/degradation, air quality and negative perceptions of such developments by interested parties could stop an ICD project from proceeding. ICDs in the United Kingdom are served by well-organized transport companies, such as third-party logistics (3PL) providers, including Roadways Container Logistics and independent road haulage specialists. The service providers in the United Kingdom have created strong networks with RFID technology and real-time cargo tracking from/to ICDs and ports. The networks are mature and robust, but also flexible to suit customer requirements, and adaptable so that regulatory changes can be easily accommodated. In the United Kingdom, cargo destined for ICDs is immediately transferred to rail for onward movement.

Based on these characteristics the study made a SWOT analysis on the port operation of United Kingdom. Thus privatization no government interference or externally imposed budget constraints, high traffic flow of hinterland industrial areas, competition, well developed

infrastructure, comprehensive cargo handling equipment, economic development, using European union transport policies, multimodal transport routes, trained and experienced personnel, ICD operations and attraction on loan capital for financing terminal investment are taken as the strength of the ICD of United Kingdom.

On the contrary high levels of competition, suppressing freight rates and charges, over utilization of infrastructure especially road, over-reliance on road transport, traffic congestion in hinterland areas and traffic regulation – night time restriction and congestion changes are the weakness in the operation of ICD.

Whereas the opportunities that UK could get from the operation of ICD are high revenue to government from trade, multimodal transport connection/ tradeoffs, globalization of trade, economic growth from international trade an attraction of loan capital from financing ICD investment.

While seeking for the opportunities there are some situations that could be challenging. Thus volatile or unsustainable freight rates, control of imported products, anti-smuggling and anti-terrorist security measures, trade imbalance, increase in freight rate charges, pressure on terminals in urban areas to be converted to other uses, environmental legislation and re-routing of freight to avoid ICD's.

2.8.5. Nigeria Experience

According to Garnwa et al. (2009), the Nigerian ICD is a private _ICNL/NICON and the governing board/ approving authorities the Nigerian ports authority its inaugurated in 1979-1996. The rail/ rail head from port to ICD is public NRC whereas road from port to ICD is federal government and it has no inland water ways transport to ICDs. The ICD's distant from the port is 200km-1500km. There are only few alternative routes that could link multimodal transport from port to ICD. Regarding the regional transport development plans/ transport policies there is no connection to Africa Union (AU) or transport policies. The Nigerian ports authority set guidelines for ICD operations. It has medium competition and utilizes low skilled labors. The security for ICD's is handled by public personnel and computerization of ports /ICD is low and no environmental

standards are accredited. Cargo flows from only from Northern regions service network from port-ICD to final destination is using rail/inland container Nigeria Limited trucks. Seaport delays due to logistics weakness and traffic congestion in seaports is very high.

By considering the above mentioned operations of dry ports of Nigeria the author made a SWOT analysis. Thus substantial revenues from the hinterland shippers' participation, large volumes of cargo to hinterland, control cargoes, destined for neighboring countries, notably Chad, Sudan and Niger, industrial development encouragement and locking Nigeria into international trade flows are taken as the strength of the Nigerian ICD. But the level of government involvement /interference in ports, inadequate infrastructural development in rail ways, excessive pressure on road transport, slow implementation of the new ICD project, lack of an integrated transport system and trained and inexperienced personnel in ICD operations, shortage of computerized cargo tracking system like RFID technology for road haulage vehicles are the weakness.

Moreover, the Nigeria's ICD's have opportunities that could benefit the country as a whole like increased revenue to government from expanded rate, multimodal transport connections and positive tradeoffs, consultation on freight rates, diversified trade, maritime development like expanded shipping activities, connection to landlocked countries, facilitating trade, connection to Africa Union transport policies and attraction of foreign investors. Nevertheless, while pursuing the above mentioned opportunities there are some circumstances that could be challenging like Commercialization, putting pressure on freight charges, Increase in freight rate charges and security measures to counter terrorist threats and arms smuggling, Excessive imports leading to cargo imbalance, High cost of inland transport, Loss of maritime land due to privatization sales, Port activities and environmental hazards.

2.8.6. India Experience

Gujar and Yan (2010) conducted a study on dry ports in India from different perspective. These include location analysis, role of government in development of dry ports and need for public private partnership (PPP), regulating dry port competition and role of regulatory authorities, environmental externalities and dry port efficiency, factors affecting dry port performance and container security at dry ports. The main findings were the dry port of India strive to enhance and

compete with the ever changing global environment by assisting the country's economy at the same time tries to minimize the shocks and potential negative consequences. Moreover, the favorable competitive platform is created which favors those operated by state owned cooperation rather than favoring all players and the market was severely influenced by factors like covers subsides, as well as restricted competition. Thus the Indian government takes both the referee and player imposing policies which favored their interest. Hence Indian dry ports are very much a tool used by the Indian government in achieving various political purposes and national objective.

Chapter Three: Research Design and Methodology

3.1 Study area

This study is done in Addis Ababa and explore issues related to the problems and gaps of the Addis Ababa dry port service. The dry port handles the import and exports of the country mainly from Djibouti sea port which is 768 kilometers from Addis Ababa

3.2. Research design

The study employ exploratory, case study. Semi structure face to face interview was developed for each groups of participants. This method is chosen because it enables the researcher to explore issues with each interviews and insure reliability. The study also employ observation so as to know more about the current situation of the Addis Ababa dry port. A checklist of the topics/ questions /issues selected as well as for observation of the dry port was prepared to control the replied and observed issues. Moreover, phone interviews, email correspondence were used to fill the gaps after the interviews being taken.

3.3. Study participants

The study was conducted through in depth interviews with participants representing different actors of the dry port service. Those actors include dry port top level managers, middle level/supervisors, and clients of the Addis Ababa dry port including transit and freight forwarding companies. As for the clients of the dry port provider interview was conducted from employees who are directly engaged on the logistics activities. Those target groups were selected because they provide different perspective of the situation and thus in reach the information. Two participants were refused to participate in the interview because they don’t have much knowledge and expertise about the issues rose in the questionnaires.

3.4. Interview model

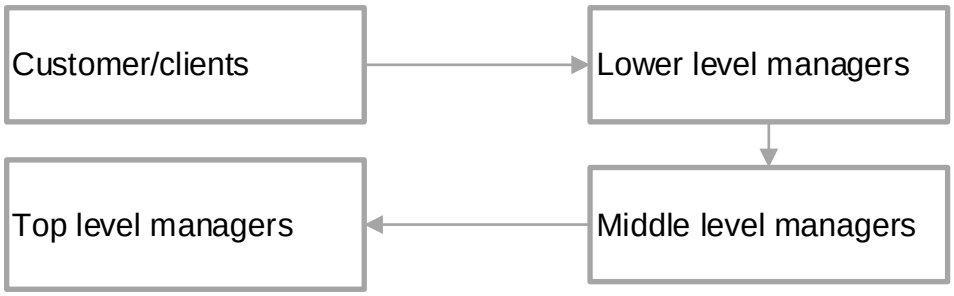

Figure 3: Interview model with different stakeholders of the Addis Ababa Kaliti dry port

3.5. Sample size and sampling methods

Sample design*:* To achieve the objectives of the study, primary data was collected from the respondents (employees and clients of Addis Ababa Dry port) selected using convenience and purposive sampling technique. Interview was conducted until information has reached saturation and no additional information could be generated from the interview.

- **Convenience sampling***:* Target population of the study are actual clients of Addis Ababa Dry port.
- **Purposive sampling:** The main reason for using purposive sampling is simply to get relevant data from those who are presumed to have the expertise knowledge on the issues addressed in this study. Not all persons in the population may have equal insight about the challenges and prospects of dry port service. The target population for purposive sampling are all managers and employees of the Addis Ababa Dry port and clients of the Addis Ababa dry port service specifically employees who are directly engaged on logistics activities. Sample frame were list of all relevant employees and managers to the service which was obtained through the recommendation of general manager.

3.6. Method of data collection, sources and research instruments

To achieve the objectives of this research, the researcher collected both primary and secondary data. For the sake of collecting primary data's the researcher mainly use IDI and observation using checklist. Since the type of research is qualitative more of data was collected through structured and unstructured interview. The interview was conducted on the interviewee's work place. And

there is no one present besides the participant and the researcher while conducting the interviewee to reduce any discomfort which might occur during the interview.

3.7. Ethical Consideration

As the research interact with the community the researcher informed and asked the participant to fill a consent form before the interview being conducted. That is the research would not harm the participants either psychologically or financially. Since Researching unethical behavior within a given firm may provide management with information on individual employees that results in an individual being fired, or undertaking industry-based research may inadvertently share sensitive information with a firm's competitors, resulting in financial harm to the organization or social harm/ Researching how lifestyle affects consumption may unintentionally disclose a person's sexual orientation when that person wanted to keep this confidential.

3.8. Data analysis

The audio interviews were transcribed and translated to English by the researcher, and checked for inconsistencies. Text files were imported to Nvivo software version 10 (QSR International), and coded independently by the researcher. Coding was done iteratively while reanalyzing the transcribed document. The issue that arose from the analysis were grouped into the following three themes: investigate the current dry pot physical infrastructure, look at the current human resource capacity in education, experience to undertake the dry port activities in responsive way, and explore the current governance.

Chapter Four: Results and Discussion

4.1 Results

Overall, 14 IDIs were conducted with 6 employees, 1 management and 7 clients of the Addis Ababa Kaliti dry port. 71% of the respondents were male and 29% were female. The majority of the respondents were aged 31-35 and have 1-3 years of experience. Interview were made with individuals having many years of experience to gain insight about the dry port activities.

Variables	Response Items	Frequency	Percentage
Gender	Male	10	71%
	Female	4	29%
	Total	14	
Age	<25 years	-	0%
	26-30 years	2	14.5%
	31-35 years	10	71%
	>36 years	2	14.5%
	Total	14	
Educational level	Primary school	-	
	Secondary school	-	
	Diploma	-	
	First degree	14	100%
	MA/Msc	-	
	PhD	-	
	Other	-	
	Total	14	
Experience	< 1 year	-	
	1-3 years	8	57%
	4-6 years	5	36%
	>6 years	1	7%

Table 2: Demographic profile of respondents

4.1. Physical infrastructure - Overview

We explored the physical infrastructures of the Addis Ababa dry port in terms of the availability of ICT and usage, roads, transportation, offices spaces, loading and unloading materials, containers, and warehouses (Table 3). The majority of the clients and employees said that the Addis Ababa dry port has poor infrastructures. Our onsite observation also confirmed that there were no adequate offices, and the employees, freight forwarders, customs officers, and work in a

container. In addition, some staffs do not have designated office to do their job. Due to these situations, the employees expressed their dissatisfaction on their job and described their working environment as unhealthy environment.

> *The working environment is not suitable or attractive to the employees. It's like spending time on a desert area. There are no proper offices for the employees (Employee of the dry port).*

Figure 4. Office facilities for dry port employees

Facilities	Available	Needs improvement	Not available
Customs Control and clearance	x	x	
Temporary storage during customs inspection	x	x	
Container handling equipment for 20 fee and 40feet containers	x	x	
Office for an operator	x	x	
Office for clearing and forwarding agents			x
Reliable and efficient communication facilities			x
Container freight station with stuffing and unstuffing services	x	x	

Table 3: Availability of dry port facilities/ personal observation

ICT facilities are poor even though there are few computers available in the offices. Those computers are only used to record simple transactions and to use easy computer applications. The computers are not networked and don't have appropriate software application that the dry port can use to ease and facilitate its operation.

> *ICT infrastructure is very poor. Even the telephone doesn't work. We usually use text messaging service when we use the Modjo dry port to know the location of the shipment but here in the Addis Ababa that kind of service is not available. They inform us either by telephone call or advertise on the dry ports notice board the arrival of the shipments. Generally, they are poor on using automated systems. They focus on paper work (Client of the dry port)*

The warehouses were small in sizes and most of the time containers are stored outside. This procedure was described as normal by the employees and management, but some clients claim that their goods get spoiled due to improper storage conditions. In additions, the dust from the poorly constructed roads can make the items dirty when they are stored this way.

Most respondents said that they haven't faced any shortage of containers since the dry port uses different lines/suppliers to fulfill the demands. Management of the warehouse were done manually and items are frequently counted

We did not found problems in loading and unloading materials. However, the respondents said that the machineries and forklifts are old and only 3 machineries and 4 forklifts are currently being used by the Addis Ababa dry port. They fail mostly and needs maintenance frequently. Though they are working, the loading and unloading of items is carried out by human man power.

4.2. Human resource capacity

Most dry port employees had working experience in dry port related activities. However, their experiences are not backed up with education. Only few employees have first degree, and even among these, only few had relevant tertiary education in dry port or logistics activities. However, most of them took short-term on-job trainings to broaden their knowledge and skills in dry port activities. Most are afraid of new change and preferred to follow old working practice.

4.3. Governance

Few respondents said the public enterprise nature of the Addis Ababa dry port has affected the efficiency of the port. However, some participants argued that the dry port competitiveness is more affected by the poor infrastructures, such as poor road and unavailability of proper offices, rather than the nature organization. The management, however, has said they are open to criticism even though they are unable to respond quickly. The employees of the dry port also noted that the management tries to involve them in decision making. On the other hand, the clients were dissatisfied in the of service they got saying that government organization are treated better than private companies.

> *The government organizations are not forced to clear their goods from the dry port within the 60 days and this is leading to congestion in the dry port. Currently there are around 93TU which are the property of Ministry of Education and Public Procurement which pass the 60 days' due date/ management of the dry port (Management of the Dry port)*

There is problem in decision making in warehouse area. Employees are not willing to replace in individuals in fear of risk especially at times when there is a need for reshuffling and replacing of manpower.

> *Taking a risk is difficult but on some activities, you don't take any risk. You just do simple and direct forward things. for example, there are counted items in the warehouse. The only person who knows the real quantity of the items are the one who are responsible on counting process (individuals who took the counting and agreed on*

it and sign a document). But in the process, the counted items may be over or a shortage and you can't overtake this kind of task. It is very difficult and risky. so on some activities there is a problem of substituting individuals to cover another person's job. The nature of the task is very risky (Employee of the dry port).

4.2. Discussion

In Western European countries, dry port is operated by well-educated and multilingual labor forces and this contributes for a better and efficient service delivery to the logistical supply chain. This might not be achievable/comparable with Ethiopian context as the European countries have a better economic potential. Nigerians experience indicate that employing a guideline for ICD operation which utilizes low skilled labor resulted in delays at their sea port and this has created logistics weakness and traffic congestion (Garnwa et al., 2009).

Among other issues, lack of trained and experienced personnel in ICD operations, shortage of computerized cargo tracking system (e.g., radio frequency identification, RFID), and poor technology for road haulage vehicle has also been mentioned as possible reason for the poor logistics. These issues were also observed at the Addis Ababa dry port. On the contrast, the ICD's in the UK are fully computerized with RFID technology and online cargo tracking for efficiency cargo flow from ports to ICD's (Garnwa et al., 2009). However, these facilities at Addis Ababa dry port were missing though some initiatives were taken to install DPIS system to improve the Addis Ababa dry port. In order to be competitive at the global level, the Addis Ababa dry port has to establish proper infrastructure to deliver efficient logistics service to its clients

The upholding of environmental standards is one vital area that is taken into account when developing port or ICD projects in the UK elements such as waste, noise, dust, habitat loss/ degradation, air quality and negative perception of such developments by interested parties could stop an ICD project from proceeding and based on the research these policies were one of the strengths of the dry port of UK (Garnwa et al., 2009). Measured in this standard, the Addis Ababa dry port has not fulfilled these requirements. It has met this vision but the health of the employees has not been considered enough emphasis and as a result the clients and the employees of the dry port are victims of unhealthy environment. It seems that the main reason to establish dry port is to reduce the foreign currency that the country paying for demurrage to the port of Djibouti.

The dry port of India strives to enhance and compete with the ever changing global environment by assisting the country's economy at the same time tries to minimize the shocks and potential negative consequences. Moreover, the favorable competitive platform is created which favors those operated by state owned cooperation rather than favoring all players and the market was severely influenced by factors like covers subsides, as well as restricted competition. Thus the Indian government takes both the referee and player imposing policies which favored their interest. Hence Indian dry ports are very much a tool used by the Indian government in achieving various political purposes and national objective(Gujar and Yan, 2010). This is also true in case of Addis Ababa dry port that they don't implement and treat all clients as one. They don't implement the 60-day rule on governmental imported items. We can see this by the number of uncleared cargoes which pass 60 days due on the dry port. Indeed, this could lead to congestion on the dry port especially on peak times of the season.

Chapter Five: Major Findings, Conclusion and Recommendations

5.1. Summary of Major Findings

Dry port is recent phenomena in Ethiopia and has been in practice since 2012. We employed In-depth Interview and observation to learn the challenges faced by Addis Ababa dry port in terms of physical infrastructure, human capacity and governance that affect delivery of quality service. Based on the study the major findings were

- The dry port infrastructural facilities are very poor. Especially the roads and warehouses- are not constructed as the way a dry port should be. Moreover, there are no proper offices for the dry port employees and other stake holders of the organization. Even though, there are stuffing and unstuffing material are available in the dry port they are outdated and need maintenance over and over again. In addition, the dry port mainly uses manual system to operate its activity which is not recommended in this globalization world.
- The other finding of the study was, most of the employees have been working in dry port related activities for longer period of time. But their expertise on the dry port activities is not backed up with advanced and logistics related education. Let alone most employees are not willing to go out from their comfort zone, which is doing a job with the usual and old trends
- Even though the management tries to participate the employees in decision making, there are some areas of activities which needs attention and system change for example warehouse activities. The study also revealed that there is discrimination between private and government clients while applying rules and regulations of the dry port.

5.2 Conclusion

The study tried to explore factors that could hinder the efficient operation of the Addis Ababa dry port considering the man power capability to undertake the dry port task, infrastructure facility, and governance of the organization.

Based on the findings

- The dry port employees are not equipped with the necessary dry port knowledge that, they are operating the dry port using old trends and manual system. Moreover, most employees are not ready to accept new things and are not comfortable to work with advanced system.
- The dry port infrastructural facilities are not enough to handle the shipments of the dry port. Forcing the dry port to be incompetent in the market. Specially facilities like roads, offices for the stakeholders, loading and unloading materials, warehouse and ICT infrastructures.
- Because of budget constraints the dry port is unable to fulfil or construct the dry port infrastructural facilities. Moreover, there is a decision making problems in some areas of the dry port activities. This leads to delaines on clearing goods and create dissatisfaction on clients.

Generally, to be competent the Addis Ababa dry port needs to improve its infrastructural facilities, upgrade its human power by education. So that it could create a good environment to its employees and in turn clients could get a better and automated service from the dry port.

5.3. Recommendations

As being the Addis Ababa Kality branch dry port started its operation recently there are a lot of things that should be improved. So based on the study I recommend the following points

- In order to cop up with the current globalization the Addis Ababa dry port should enhance the knowledge of its employees not only by short term trainings but also they should give them the chance to study a formal logistics education or hire graduates of logistics and related studies so that the dry port could be led by a professional personnel.
- The government should also take experience of other countries so as to improve its service delivery. But when we take experience of other countries we should consider our countries current situation i.e. availability of human power as well as financial capability.

- The government should also treat all its clients the same way and all rules and regulations should be implemented to all clients. Otherwise not implementing the rules specially the 60 days, due date rule could make the dry port congested specially on peak times.
- The dry port should improve its ICT infrastructure so as to get updated information on every activity of the dry port. Moreover, the dry port should depend on a system not individuals. And clients could easily get the information they needed in real time.
- Most importantly the dry port should give a priority to build proper offices to its employees and construct the roads as well. This could benefit both the employees as well as the organization creating job satisfaction to its employees.
- Finally, but strongly, I recommend other researchers to conduct a more in depth study on the same or related topic of this study by using more preferably other methods of research like that of longitudinal studies.

Appendix (a): In-Depth Interview Guide for the management of the Addis Ababa Dry port

Personal Information questions

- Please tell me a bit about yourself?
    - Your position?
    - Education?
    - Work experience in the field?

Dry port governance related questions

- Does the government allocate adequate fund to run the dry port effectively?

  Probe
    - How much fund is allocated annually (For example, in 2015)?
    - Is the fund enough to operate the dry port effectively? Please elaborate this idea more
- What periods of the year is pick time?
- How is the management attitude to respond the market?

  Probe
    - When there is a demand for the service
    - When there is a need for a new pattern of operation?
- Please describe the management of the dry port.
    - Does it involve the employees in decision making process?
    - Does it try to make a quick decision on changing schedules?
    - Does it accept customer's complaint and suggestion to improve its service?
- What kind of activities does the management make to strengthen knowledge of the dry port employees?

  Probe
    - On job training? or training given before hiring?
    - Hiring experienced personnel on post

Physical infrastructure related questions

- On average, how much volume of goods does the Addis Ababa port handle per year?
- How do the physical infrastructure are helping the efficient logistics chain as a whole?

  Probe

  - Availability of container to handle all types of goods (perishable and non-perishable items)
  - Transportation availability
  - Road infrastructure
  - Ware house availability
  - ICT infrastructure and use

Human resource related questions

- Please describe the human resource capability to undertake all the customs examinations

  Probes

  - Education
  - Experience
- What factors would most improve your capacity to provide quality service to your organization?
- How often do you get on-job training?
- What skills and knowledge are most critical in this organization?

  Probe

  - Are you equipped with those skills either by education training or experience? please elaborate more
- Give an example of a time when you could not participate in a discussion or could not finish a task because of lack of training. What did you do?

Concluding questions

- Are there any other issues we have not covered that you would like to discuss?

Appendix (b) In-Depth Interview Guide for employees of the Addis Ababa Dry port

Personal Information questions

- Please tell me a bit about yourself?
    - Your position?
    - Education?
    - Work experience in the field?

Dry port governance related questions

- What periods of the year is pick time?

    Probe

    - What arrangement does the dry port implement to ease the congestion? How flexible is the dry port's market condition in response to pick times?

- Please describe the management of the dry port.
    - Does it involve the employees in decision making process?
    - Does it try to make a quick decision on changing schedules?
    - Does it accept customer's complaint and suggestion to improve its service?

- What kind of activities does the management make to strengthen knowledge of the dry port employees?

    Probe

    - On job training? or training given before hiring?
    - Hiring experienced personnel on post

Physical infrastructure related questions

- How do the physical infrastructure are helping the efficient logistics chain as a whole?

    Probe

- Availability of container to handle all types of goods (perishable and non-perishable items)
- Transportation availability
- Road infrastructure
- Ware house availability
- ICT infrastructure and use

Human resource related questions

- Please describe the human resource capability to undertake all the customs examinations

  Probes

  - Education
  - Experience

- What factors would most improve your capacity to provide quality service to your organization?
- How often do you get on-job training?
- What skills and knowledge are most critical in this organization?

  Probe

  - Are you equipped with those skills either by education training or experience? please elaborate more

- Give an example of a time when you could not participate in a discussion or could not finish a task because of lack of training. What did you do?

Concluding questions

- Are there any other issues we have not covered that you would like to discuss?

Appendix (c): In-Depth Interview guide for Clients

Question related to personal and work Information

- Please tell me a bit about your company background?
- How you came to be doing this kind of work? How long have you been engaged in freight forwarding activities?
- Are you happy with what you are doing?

Question related to the dry port governance

- Do you think the dry port service is capable?

  Prompt

  - In providing an up to date information to the stake holders
  - To handle all the shipments with the current facilities/human and material
- How flexible is the dry port in response to market condition change specially in pick times?

  Probe

  - Hire additional employees
  - Work longer hours
- Does the management of the Addis Ababa dry port accept your complaints and suggestions to improve its service? Tell me your experience.
- What do you like to be changed at Addis Ababa dry port to improve its efficiency?

  Probe

  - Infrastructure related (cargo, transportation availability, warehouse, ICT infrastructure and usage)
  - Human capacity (availability of trained and well qualified staffs)
  - Governance (flexibility, open to criticism….)
- How fast does the Addis Ababa dry port make decision when unplanned situations occur?
- Discuss some of the problems you have encountered on getting the service.
  - Please explain in terms of Inadequate infrastructure
  - Please explain in terms of Lack of training of employees of the dry port
  - Please explain in terms of poor management
- Where do you see growth or change occurring in the organization?

- What skills and knowledge are most critical in this organization?

  Probe

  - do you think the dry port employees are equipped with those skills either by education training or experience please elaborate more?
  - Give an example of a time when the dry port employees could not finish a task because of lack of training

Concluding questions

- Are there any other issues we have not covered that you would like to discuss?

Appendix (d): Informed Consent Form

I want to thank you for taking the time to meet with me today.

My name is _____ and I am conducting my Master's thesis entitled "Analysis of the dry port service in Ethiopian Context: the case of Addis Ababa dry port Kaliti Branch". The study explores the gaps and problems of the Addis Ababa dry port service. I would like to conduct an interview so that you could share me your experience of the Addis Ababa dry port service. Your response could be a good input for improving the dry port service in the future. The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments.

Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we are on tape, please be sure to speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in my report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are you willing to participate in this interview?

☐ Yes ☐ No

Interviewee	Witness	Date
_____	_____	_____

Appendix (e): Port Terminal Checklist

Name of the dry port; Addis Ababa dry port/COMET

SECTION 1: Terminal Infrastructure Checklist Items			
No	**Item Requirement**	**Yes**	**No**
1.	Terminal Warehouse construction suitable for proper storage and handling of commodities		
2.	Outside premises are well drained		
3.	Terminal Warehouse structures properly maintained to protect commodities in storage		
4.	Adjoining property or nearby water source does not constitute an undue physical hazard to commodities in store		
5.	Terminal premises and grounds are free of weeds, clutter, trash, unused equipment, or spilled commodities		
6.	Dock areas are clean with a minimal accumulation of dust		
7.	Availability of containers handling equipment for 20 foot 40 foot containers		
8.	Availability of office for an operator		
9.	Availability of office for clearing and forwarding agents		
10.	Availability of reliable & efficient communication facilities		
11.	Container freight station with stuffing & unsnuffing service		
SECTION 2: Commodity Storage Conditions Checklist Items			
12.	Commodities stored in an orderly manner		
13.	Commodities in store properly marked or identified		
14.	Commodities are clean and protected from bird droppings, dust, filth, and stains		
15.	Adequate and clean pallets are used		
16.	Storage areas are kept dry		
17.	Warehouse is clean and proper housekeeping practices are used		
18.	Hazardous materials or contaminants are not stored near commodities		
19.	Warehouse is free of objectionable odors		
20.	Damaged or nonconforming products are removed from the commodity storage areas		

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