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Abstract: Throughout the eras, Africa is considered to be one of the most important economic treasures which were never well utilized despite the great potentials that qualify Africa to become an important and effective element in the global trade exchange. However, the significant growth in African Gross Domestic Product (GDP) and the developments in the maritime and logistics industry could give us very good indicators towards a promising future. There are many integrated strategies must be taken into consideration to achieve effective investments in such sector.

The research aims to highlight important elements that help to study the prospects of developing the maritime industry and logistics in Africa. Based on the research outputs we could conclude that Africa maritime and logistics sector is encouraging to play a significant role in handling logistics activities associated with international trade. Thus cooperation in improving the efficiency of shipping and related logistics activities besides developing the human resources through capacity building and establishment of a job skills guideline that based on the global stander can have a positive and significant influence in boosting trade flows.

Overall global investments for a good shipping service with regular trade vessels, particularly container carriers, is highly needed as a promising opportunity for the investors and economic entities in the field of maritime and logistics industry.

1. INTRODUCTION:

Africa occupies an area of 30,370,000 km² with a population of 1,220,000,000 and 36,4/km² population density, thus Africa covers about 6% of the earth's total surface. Today,

the region's economic outlook is rather promising as the regional GDP increased to grow by 0.8% in 2017.

There are also signs of improvement in the quality of growth: During the 2000s, Africa's labor productivity increased by close to 3%, almost half of which was attributed to workers moving to new activities with higher productivity. This is very important: productivity enhancement is what sustains economic growth in the longer term [1, 2].

In accordance of the international trend of globalization and the tendency to open global horizons to enhance the movement of world trade, particularly in the area of maritime transport, Africa remains one of the most important opportunities to be exploited to become a key partner in this direction.

The continent of Africa is strategically located in the middle of the world continents and is strongly qualified to occupy a significant position in world trade map if this unique location is well exploited as well as natural and geographical resources.

Africa has a coastal nature and many natural ports on its eastern and western borders whereas more than 30 states of the 05 are coastal states which handle 6% of the worldwide water-borne cargo traffic and about 3% of the world's container traffic.

Africa ports and logistics has unexploited advantages at the optimum level such as location close to major world or regional shipping routes, leading to minimum deviation from that shipping route, Land area available for cargo storage and/or value adding activities; and sufficient depths in approach channel and the port and the possibility to increase the depth if required.

2. RESEARCH OBJECTIVES:

This research will focus on the opportunities for global maritime and transport investment towards enhancing African ports competitiveness on the international maritime map as well as challenges facing the development and integration of ports and logistics in Africa.

The research also aims to highlight important elements that help to study the prospects of developing the maritime industry and logistics in Africa such as: the ability of African ports to receive global investments, the qualification of Africa to enter the era of smart ports, the eligibility of Africa for sustainable development, and the effect of the flow of investment on the change in maritime transport legislation in the continent. The research also focuses on the opportunities for global maritime and transport investment towards putting Africa firmly on the international maritime map as well as challenges facing the development and integration of ports and logistics in Africa.

3. METHODOLOGY:

Based on classification of African ports and logistics all over the continent into three main classes Pivotal zones (hubs), Emerging ports, promising ports and SWOT analysis could obtain a brief study for the Challenges and Opportunities for Enhancing Port competitiveness in Africa as well as proposed methods for enhancing African ports competitiveness as shown in (Figure 1).

Africa is a continent that has sixty ports and more than half of its ports are located in East and West Africa. East and West African ports are ports that play an important role in the World trade, as an important percentage of the World trade, transit through these ports. They are also considered as economic lungs for the countries they belong to, due to the amount of money they generate. Becoming efficient is an absolute objective that was fixed by every port in these two regions in order to attract more vessels, at the same time increase the revenues. These two regions are considered by many investors as the two biggest markets in Africa, due to the number of their population and the fast growth of the gross domestic product of the countries belonging to these regions.

However, we could identify three main pivotal hubs which basically connect Africa with the world which are represented in (Port of Durban - South Africa, Tanger-Med - Morocco and Suez Canal Zone - Egypt). Such classification based on many factors such as volume of cargo handling, logistics facilities, geographic location, and the connection with land-lock countries in Africa as well as the rate of development and investment opportunities.

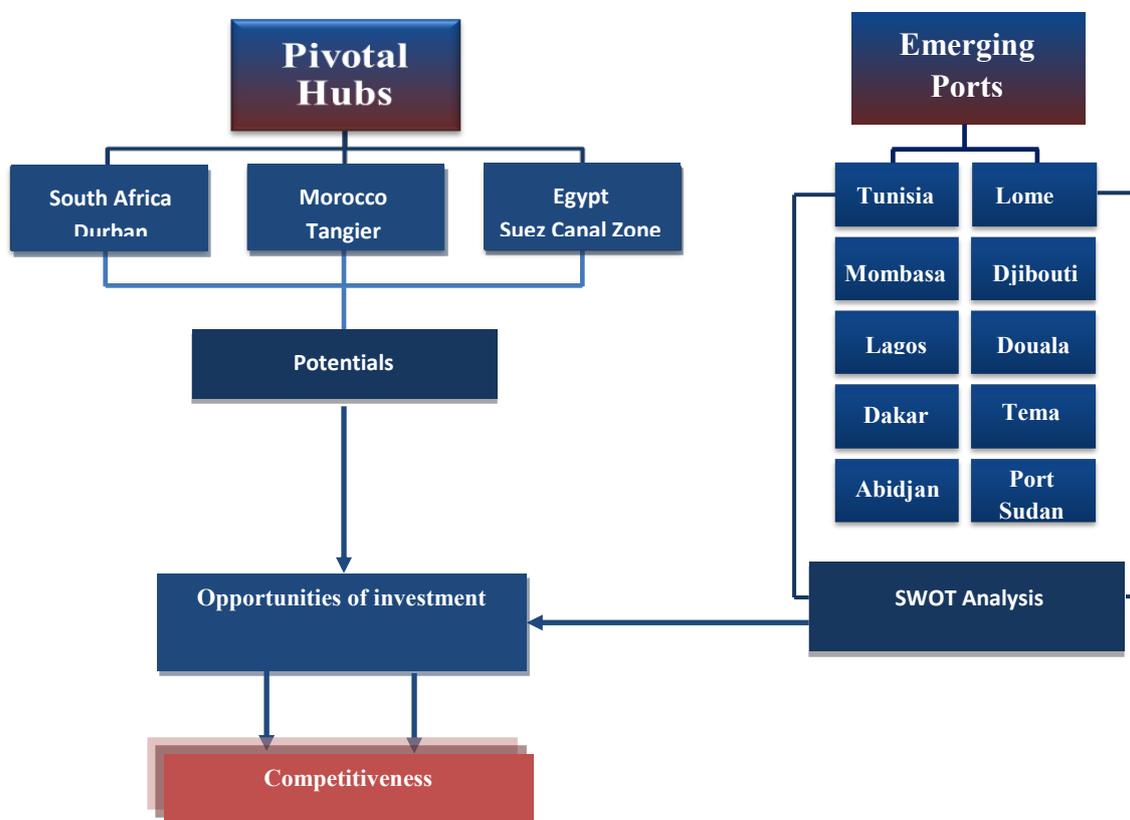


Figure 1 "Enhancing African Ports Competitiveness"

4. PORT COMPETITIVENESS IN AFRICA:

The research studies the importance and effectiveness of the below mentioned pivotal hubs on which Africa relies as a cornerstone points for its trade exchange which are mainly Suez

Canal (Egypt), Tangier-Med (Morocco), and Port of Durban (South Africa), as well as The Emerging Ports in the north, east, and west of Africa, in addition to study the human recourses, logistics , information technology and opportunities for sustainable development as an important factors to identifying the challenges and opportunities for investment and development [17, 18].

4.1 Pivotal hubs

According to the Geographic location, cargo handling rate and development projects, Port of Durban, Suez Canal Zone, Tangier-Med could be represented as the most important and effective pivotal hubs in Africa as shown in "Figure 1".

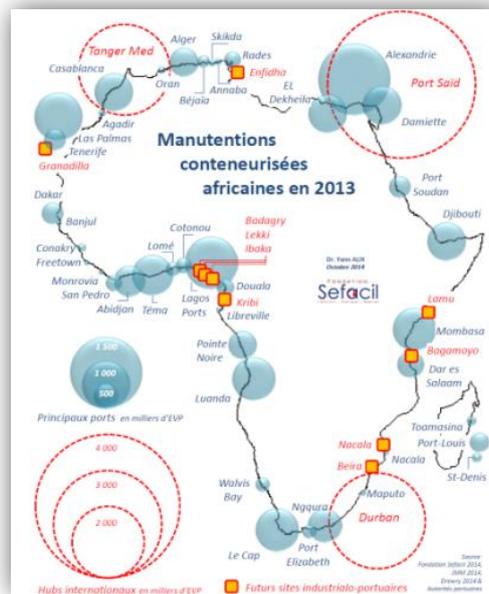


Figure 1 "Busiest Ports & Pivotal Hubs in Africa"

Port of Durban - South Africa:

Durban is the main southern Portal of Africa. It is one the largest port in Africa, Durban is considered to be the busiest port in South Africa and generates more than 10% of revenue. It is the second largest container port in Africa (after Port Said in Egypt) and it is the fourth largest container port in Southern Hemisphere. (First is Jakarta in Indonesia, second is Surabaya in Indonesia, and third is Santos in Brazil).

The distance around the port is 11 kilometers (13 miles) with Rail tracks total of 302 kilometers (188 miles) and the port has 68 berths which are operated by more than 20 terminal operators with Over 400 commercial vessels call at the port each year. The Port of Durban is South Africa's premier port and hub of the region, especially for the Johannesburg (Gauteng Province) area.

As the current port is not sufficient to deal with the recent demand for capacity, the focus is on the development of a new port in the immediate vicinity of Durban. The Durban-Dig-Out port (extension) is designed to cover an annual total container production of 1,000,000 TEUs, an annual liquid annual production rate of 2,000,000 kg and 300,000 vehicles annually. The Ruling Vessel is a container ship with a capacity of 22,000 TEUs, 230 meters long, 33.5 meters wide and 16.3 meters. The check for the TEU design vessel is reviewed 22,000. Based on global developments in shipbuilding and a quick look at developments in container trade in South Africa, it was concluded that the 22,000 TEU vessel is recommended for port design [6].

Suez Canal Zone - Egypt

Suez Canal Zone is one of the most heavily used shipping lanes in the World (8% of the World's seaborne trade) as it is the shortest route between the sub-Indian continent and Asia-Pacific Region with the markets of Europe and North Africa which allows significant saving cost for the vessel (time and logistics costs), Interval between ships: 10-16 min (2-3 kilometers). The New Suez Canal Project shortens the transit time from 14 hours to 11 hours. The monthly number of vessel: 1,411 (Jan 2010).

The Suez Canal Zone Spanning 161 km², almost two-thirds the size of Singapore, it consists of two integrated areas (Ain Sokhna with Ain Sokhna Port, East Port Said with East Port Said Port), two development areas (Qantara West, East Ismailia) and four ports (West Port Said Port, Adabiya Port, Al Tor Port and Al Arish Port). Concerning the Integrated areas, each integrated and developed area provides investment opportunities in industrial and commercial enterprises, infrastructure and real estate development, logistics, amenities and state-of-the-art technology. Planned port expansions will increase the capacity for handling maritime traffic and for offering related services such as ship building, stevedoring, bunkering, vessel scrapping and recycling.

Tangier-Med - Morocco

Tangier is considered to be the north-western capitol for Africa and the major maritime transport link of North and West Africa countries with Europe and America. Tangier consists of 2 ports Tangier Med 1, and Tangier Med 2.

Tangier Med 1: represents 1,6 km of container docks at (-16.0) and (-18.0) meters, 2,6 km of dikes and 140 hectares of land, of which 80 hectares for container traffic with capacity of 3,000,000 containers, served by rail as well in addition of 2 petrol stations.

Tangier Med 2: 2,8 km of container docks at (-16.0) and (- 18.0) meters, 4,8 km from dikes and 160 hectares of land totally won over the sea with capacity of 2,200,000 containers in addition of 2 optional oil stations .

4.2 Opportunities of investment in pivotal hubs

According to the World Ports Sustainability Program (WPSP) which has been launched in Antwerp March-2011 [7], there is a high need to enhance the main following fields in such hubs to ensure the international competitiveness 2030:

- Resilient infrastructure (Port Planning – PPP – Digitization and automation – Ecosystems Management).
- Climate and Energy (Energy efficiency – Circular economy – Bio-based economy – Clean ship incentives – deployment of alternative transport fuels).
- Community outreach and port-city dialogue.
- Safety and Security.
- Governance and ethics.

These fields are already being maximized by creating investment opportunities in infrastructure, IT, supply chains clusters and integrated logistics areas currently being established, however still high need for attention to enhance environmental projects in ports and alternative energy besides maximizing the role of skills guide line concerning capacity building .

Overall, Africa with the recent projects is improving its potential to enhance the flow of trade delivered to Europe, Asia and America through the Pivotal Zones in South Africa, Egypt and Morocco.

4.3 Emerging ports SWOT analysis

During the recent years, many African countries have adopted new plans for the development/ construction of port and logistics infrastructure as a key factor for polarization of international shipping agencies and increasing trade and investment, such as Tunisia (Tunisia), Lome (Togo), Djibouti (Djibouti), Mombasa (Kenya), Abidjan (Côte d'Ivoire), Tema (Ghana), Douala (Cameroon), Lagos (Nigeria), Dakar (Senegal), etc [14,15].

Challenges and Opportunities for Enhancing Port competitiveness in Africa could be expressed through a SWOT analysis as well as proposed methods for investment for enhancing African ports competitiveness.

Strengths:

There are several potentials for Eastern and Western African emerging ports which qualify them for a promising future in the case of good exploitation, and leads to increased productivity and global competitiveness in general .Such natural potentials could be represented in: deep water ports on the West and east African coast that can accommodate 3rd generation ships, promising Efficiency for Sustainable Development, ports with a distinct Central location are eligible to be important pivotal ports such as Djibouti and Lagos, and Promising efficiency of customs and border management clearance besides, the eligibility to attract more shippers, carriers and cargo owners [16].

Weaknesses:

There are also some weaknesses that impede the development process in these emerging ports, however, the accessibility is affordable and could accelerate the development process such as: Separation between ownership and management, Absence of marketing policy as well as Low services & port operations performance rates and Lack of advanced storage facilities in terminal. Also, there is a high need for information sharing & Technology,

improvement of the customs procedures to match with the landlocked countries, advanced storage facilities in terminal. But the most effective weakness could be detected is the Lack of sustainability policies and procedures and high need of skills guideline concerning training and capacity building [10].

Opportunities of Investment:

Overall African emerging ports have a natural potential to attract more ports and terminals agencies, shippers, carriers and cargo owners in term of international shipments and attract more ships in terms of Life Space Crisis Intervention (LSCI). Also, Africa has natural potentials and recourses to investigate in Sustainable Development such as alternative energy and Port and inland infrastructure focusing on the transport services (including roads, ports, and airports). Moreover Intelligent & technology in Eastern and Western ports, integrated automation terminals, and fisheries industry are very effective opportunities of investment Ultra Large Container Vessel 10,000 TEUs will soon have potential ports in West Africa to handle such vessels which is a very good indicator for promising maritime investment [11].

Threats:

Main threats facing the development process in ports could be represented in: high need of skills guideline concerning training and capacity building, Lack of sustainability policies and legalization, and inadequately funded Highway and Suburban Roads maintenance in some Areas of and landlocked countries.

◦. PROPOSED METHODS FOR ENHANCING AFRICAN PORTS COMPETITIVENESS

As a result, enhancing African ports competitiveness depends on the development and investment in the following four main factors

1- Infrastructure and Logistics

With a significant increasing number of vessels and terminals lining all over the world, African ports need to increase their market positions and stay competitive. Such competitiveness could not be enhanced without the investment in the logistics sector as:

- Container terminals, Utilities and services.
- Car terminal zones.
- Storage, dry bulk terminals.
- Multipurpose terminals.
- Fishing zones, Logistics zones.
- Supply Chain Clusters.
- Development of the port access roads.

٢- Information Technology

Information technology and sharing data are one of the most important main key factors for competitiveness, therefore investment and development in the following elements is the gateway for enhancing competitiveness and ensuring connectivity of African ports with the latest global trends and activating sustainable development.

- Existing of Single Window for Port Community System which will accelerate applying IT in new sectors like Dry Ports and Container Terminals Which Affect Positively the Trade between Africa and Europe.
- Existing IT systems in Western African Port are expected to facilitate propagating IT solutions in the remaining activities in the port.
- New systems that could be introduced for the newly developed activities with Europe and integrating them with existing systems.

٣- Sustainability

One of the major obstacles to sustainable development in the maritime and logistics sector in Africa is the environmental problems and ballast water management which are negatively affecting integration with European ports.

There is a High Need for:

- Environmental Systems Auditing for Ports e.g. "PERS" certification.
- Environmental Awareness especially in the Maritime Sector.
- Complete solutions for ballast water management and Consultancies.
- Applying Environmental Checklists in ports and stakeholders to be ingenerated with the international maritime environmental systems especially of Europe.

٤- Building Capacity:

The objective of the capacity building and training activities is to create, enhance and develop constituent capacity at industry level to design, implement and supervise port development training and maritime security scheme [١]].

- Upgrading /improvement of skills/knowledge training courses & programs.
- Developing skills guideline according to recent maritime international requirements.

٦. CONCLUSION AND RECOMMENDATIONS

Africa maritime and transportation sector has a significant role in handling logistics activities associated with international trade. Thus improving the efficiency of shipping and related maritime and logistics activities can have a positive and significant influence in boosting trade flows.

Having a good shipping service with regular trade vessels, particularly container carriers, with an adequate frequency to reduce waiting times and costs.

There is an urgent need for the establishment of a job skills guideline based on the global standers for port and logistics operation and to create an international standardization of training in Africa.

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