SOME ECONOMIC AND ENVIRONMENTAL BENEFITS OF MARITIME TRANSPORTATION IN NIGERIA

Akaso³, A. A., Bariweni¹, P. A. and Abowei², J. F. N.

ABSTRACT

¹Department of Geography and Environmental Management, Faculty of Social Sciences, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria
²Department of Biological Sciences, Faculty of Science, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria
³School of Maritime Studies, Maritime Academy of Nigeria. MAN-ORON; PMB 1089, Akwa Ibom State Email: danmasanijos@yahoo.com

Some Economic and Environmental Benefits of Maritime Transportation in Nigeria are reviewed to facilitate the development of an effective and efficient maritime transportation in Nigeria. The paper discusses the Origin of water transport, life at sea, ships and watercraft, development and importance of water transportation in Nigeria: promotion of trade and commerce, revenue and availability of finance, promotion of tourism, development of related economic activities, creation of employment and job opportunities, industrial growth and development, institutional development, international relations and peaceful coexistence, social-political harmony and defense and security.

Keywords: Maritime transport, Origin, development, ships and watercraft, economic and environmental benefits.

INTRODUCTION

Marine transport which is also water born transport, is one of the mode of transport of goods and/or persons, others being air, road, rail ropeway transport. Maritime transport is essential to the proper operation of any country’s transport and a vital part of a nation’s transport infrastructure. A minister of transport of the Federal Republic of Nigeria was once quoted to have said that transport is to the Nigeria economy as Artery to the blood circulatory system of the body. Without marine transport, Nigeria would have been Landlocked. And its economy would not have moved forward but remain stagnant in different areas and as such marine transport is of significant importance to and greatly influences the growth and development and growth of the Nigerian economy in several ways: It is a key sector in the Nigerian economy (Adams, 2002).

By definition, marine transport is the means of carrying or affreightment of goods or persons by water, whether inland waterways including rivers and oceans. It can be domestic (inland or coastal) supported with boats, ferries, coastal vessels of less than 500 gross tonnage or ocean transport with big vessels of over 500gt in size and types which supports international trade. More than 96% of transportation of Nigeria’s trade is by maritime transport. This shows its dominating importance in the transportation sector which is why the Nigeria Government is interested in the maritime sector (Ward et al; 2005). In actual fact, one of the dominating effects of maritime transportation sector on the Nigeria economy was felt recently due to the Federal Government’ introduction of 100% physical inspection of goods at destination and the failure of importer who undervalued or cancelled their goods to take delivery of their discharged goods because they lacked Clean Report of Inspection (CRI) of the goods thereby causing “bunching” which led to many problems including scarcity of imported goods, raw materials and inflation. The Origin of water transport, life at sea, ships and watercraft, development and importance of water transportation in Nigeria: promotion of trade and commerce, revenue and availability of finance, promotion of tourism, development of related economic activities, creation of employment and job opportunities, industrial growth and development, institutional development, international relations and peaceful co-existence, social-political harmony and defence and security are some economic and environmental benefits of maritime transportation in Nigeria are reviewed to facilitate the development of an effective and efficient maritime transportation in Nigeria (Watson, 2005).

ORIGIN OF WATER TRANSPORT

Historically, societies have always located near water, due partly to the fact that water enables more efficient travel compared to going over land. Waterways are critically important to the transportation of people and goods throughout the world. The complex network of connections between coastal ports, inland ports, rail, air, and truck routes forms a foundation of material economic wealth worldwide. Within the United States, waterways have
been developed and integrated into a world-class transportation system that has been instrumental in the country's economic development. Today, there are more than 17,700 kilometers of commercially important navigation channels in the lower 48 states (Watson, 2004).

The historical development of water-based transportation is connected to the importance of domestic and international trade. Early exploration of North America identified large amounts of natural resources such as fisheries, timber, and furs. Trade centers were established along the east coast of North America where goods could be gathered together and ocean vessels could transport them to consumers in Europe and other foreign areas. The success of commercial trading companies spurred the introduction of water transportation (Vial, 2007). Waterways in developing countries are critical venues for local and regional commerce. Fruit and vegetable vendors flock to floating markets on rivers and canals, such as this one in Bangkok, Thailand. More colonial settlements are involved in additional increases in population, economic activity, and trade. From the sixteenth to the eighteenth centuries, small subsistence farms were prevalent among the American colonies. Eventually larger farms emerged and produced crops such as wheat, tobacco, rice, indigo, and cotton that were commercially marketable in Europe. Ocean vessels transported the bulk, low-value goods from the colonies to Europe and returned with high-value, low-density goods such as inks, linens, and finished products that had a much higher return on the investment per vessel trip (Vial, 2009).

![Fig. 1: Fruit and vegetable vendors, floating markets on rivers and canals](image)

Agricultural production continued to grow and support the growing colonies’ economic development. The speed and low cost of transporting goods by water influenced the locations of population settlements near navigable water (rivers, lakes, canals, and oceans). Goods produced on inland farms were transported via inland waterways to the coastal ports. Goods shipped by smaller vessels from surrounding ports were transported to New York, Boston, and Philadelphia, and exported on larger oceangoing ships. These ships from the smaller ports then transported imported goods back to the surrounding ports (Vial, 2007).

During the 1700s, the British government passed many acts, such as the Navigation Acts and the Stamp Act of 1765, designed to collect taxes from the colonists. The acts affected trade, and were met with opposition from the colonist. In Philadelphia during the fall of 1774, the "Declarations and Resolves of the First Continental Congress” called for non-importation of British goods, and became a catalyst for the American Revolutionary War (1775–1784). The resulting independence for the United States allowed trade a free rein, and it flourished. The westward expansion of the United States exposed a wealth of natural resources and an increased production in agricultural goods. The inland transportation infrastructure of roads, railroads, canals, and rivers connected the early western settlers with the rest of the nation, and enabled goods to move from the west back to more populated areas in the east and onto other parts of the world. The River and Harbor (Appropriations) Act of 1876 established federal funding of waterways to promote national commerce but not to benefit any particular state or to allow waterway tolls (Vial, 2009).

Increased levels of world trade resulted from the economic growth occurring since the end of World War II in 1945. The United States was in the position to take advantage of new trading opportunities as new world markets opened. Developing countries demanded capital goods, agricultural products, consumer goods, and commercial services, which the United States could provide. As these nations produced goods for export, the United States became a market for these goods. A significant factor in the opening of the inland waterway system (and the resultant world trade superiority of the United States) was the advances in ship technology and the application of steam power to ships that traveled the extensive water network. Larger and faster ships emerged from the advances in ship and engine design and improvements in construction materials (Copeland, 2008). Methods of
cargo handling evolved to keep pace with the larger vessel sizes. The introduction of palletization and roll-on/roll-off cargoes enabled vessels to be loaded and unloaded in less time. The emergence of containerization in the late 1950s dramatically affected the shipping industry and port infrastructure. The increasing size of containerized cargo vessels became a driving force in the demand for expanded ports and improved facilities. Transporting goods with foreign trading partners can be accomplished by road, water, rail, or air. Modern ferries, cruise ships, and many types of recreational boats carry passengers for purposes ranging from daily business commuting to fishing to sightseeing. The ferry system in Halifax (Fig 2), Nova Scotia (Canada) exemplifies the importance of waterways for transportation. Majority of foreign trading partners, the only options for transportation are water or air. Water-based transportation is generally the most cost effective mode for the majority of internationally traded goods. About 95 percent of U.S. foreign trade passes through its port system. Ports function as the transfer point between land and water transportation of cargo. For vessels to transport the foreign traded cargo, they must be able to access the ports through established channels. The channels provide adequate water depths for the vessels and navigational aids (Simpson et al; 2010).

Today the world economy has become globalized. The economic system is changing from one with distinct local and national markets, separated by trade barriers, distance, time, and culture, to one that is increasingly converging and integrating into a global economy (Vial, 2007). According to the National Oceanic and Atmospheric Administration (NOAA), the United States was the world's leading trader in 1998, accounting for about one billion tons of ocean-bound trade (about 20 percent of the world's total ocean-bound trade) out of about 2.4 billion tons of total foreign trade. In 2000, according to the U.S. Department of Transportation, approximately $736 billion of goods (about 40 percent of the total U.S. foreign trade by dollar amount) were shipped via ocean vessels and passed through U.S. ports. By 2020, international trade is estimated to more than double (by weight) within the United States, with the majority of this trade projected to move via ocean shipping (Harrabin, 2003). According to the Department of Transportation, when cargo is transported by water within the United States, 95 percent of the time it involves the Marine Transportation System (Fig. 3). This comprehensive system resulted from years of water transport development involving such U.S. organizations as the Coast Guard, Maritime Administration, Army Corps of Engineers, NOAA, and Environmental Protection Agency (Vanderlaan and Taggat, 2007).
The diversity of the system’s users is illustrated in this photograph of the Port of Tacoma, Washington, where a sea kayaker shares the water with a container vessel. (Container cranes and Mount Rainier are visible in the background.)

The MTS is a complex and diverse national network of waterways, ports, and intermodal landside connections that allows various modes of water-based transportation (Vial, 2007). The system includes: navigable waterways (such as the Great Lakes-St. Lawrence Seaway); publicly and privately owned commerce-carrying vessels; over 3,500 bulk oil transfer facilities; more than 350 ports located at approximately 4,000 marine terminals; about 40,000 kilometers of navigable channels; more than 235 locks and dams at over 190 locations; shipyards, rail yards; vessel repair facilities, over 10,000 recreational marinas; and a trained labor staff that operates and maintains the entire infrastructure. Users of the waterway system each year include 70,000 port calls for commercial vessels, 110,000 fishing vessels, and 20 million recreational vessels (Huttel, 2004).

Many nations around the world have built up their fleets to become very profitable. Since World War II, the size of the U.S. flag merchant fleet has declined, partly due to improved technologies and partly due to foreign competition among fleets. But while this number of ships has declined, the productivity has greatly increased. Since 1970, these fewer ships carry 42 percent more cargo. However, the U.S. fleet accounts for less than 5 percent of all commercial foreign trade by weight. Data from the U.S. Army Corps of Engineers and the Maritime Administration indicate the following composition and carrying capacity of the U.S.-flag fleet in 2000 (Meinerz, 2003).

All ships must be registered to one of the world’s nations so that responsibility for violations of international laws and conventions may be assigned. This causes many shipping companies to shop around for nations that give them the best values on taxes, wages, and legal restrictions. Liberia has the largest shipping fleet in the world. Relatively smaller countries like the Bahamas, Honduras, the Marshall Islands, Panama, and Vanuatu have large fleets as well. The United Nation’s International Maritime Organization (IMO) is responsible for improving the safety of international shipping, preventing marine pollution, and facilitating international maritime traffic. The Department of Transportation has the overall lead on all maritime issues for the United States, and works with the IMO on these issues (Reilly, et al; 2008).

The United States dependence on seas and waterways has been vital to its economic success and national security. The pool of skilled labor working on U.S. flag vessels is also a national security asset. This workforce is relied upon to meet surges in shipping needs in the advent of emergencies. The merchant marine has played a historical role in military conflicts. In 1996, the Maritime Security Act established the maritime security program to support a fleet of U.S. commercial vessels with American crews to support the military and economic security of the country; approximately 47 vessels participate in this program (Schmidt and Oleiker, 2004).

The inland waterways are also a national security asset. The 1920 Jones Act required domestic waterborne commerce to be transported in vessels built in the United States, documented under U.S. laws, and owned by U.S. citizens. The Jones Act covers over 42,000 commercial vessels, 124,000 jobs, and $15 billion in economic activity. Many other countries have similar laws restricting foreign access to domestic trade shipped via waterways.

The MTS is also vital to national security. The ability to rapidly deploy troops and materials worldwide is critical to the country’s defense. The Voluntary Intermodal Sealift Agreement (VISA) is a standby agreement intended to make commercial, intermodal dry cargo capacity and supporting infrastructure available to meet contingency deployment needs of the Department of Defense. Since World War II, approximately 95 percent of all military equipment and material sent to combat and crisis areas were ship cargo transported by ocean vessels. For example, during the Persian Gulf War (1990–1991), nearly all domestic supplies intended for U.S. military forces traveled by ship. Marine transportation is an important use of the ocean. Increased demands will be placed on U.S. ports and waterways as domestic and international trade continues to expand. These increases in the use of waterways and port facilities must be achieved while still protecting human health and the environment. In an era of skyrocketing fuel costs and environmental concerns, more and more businesses are making the cleaner, more affordable transportation choice — Marquette Transportation (Vial, 2007). As one of the nation’s largest marine transporters, Marquette is a part of an environmentally based industry — and one that is vital to our U.S. economy and national security. Marine transportation offers superior environmental, cost and safety advantages when compared with semi truck and rail car, making it one of the best choices for moving virtually any type of cargo. Transportation by barge also offers greater capacity to move more products and relieves congestion in other transportation modes, such as highway, air and railroad. The Environmental Advantages by the Numbers include: A single barge can transport more cargo than 58 semi trucks or 15 jumbo hopper rail cars, while reducing propulsion emissions by one-third or more.

One gallon of fuel can move one ton of freight 522 miles by barge, compared to 386 miles by train and 59 miles by truck. Oxides of nitrogen are the chemicals that produce smog. While moving one ton of freight 1000 miles:
Trains produce 3.5 times the oxides of nitrogen as barges
To move domestic waterborne commerce by truck would require 41 million more truck trips.
To move domestic waterborne commerce by truck would require 9.9 billion gallons of additional fuel.
To move domestic waterborne commerce by truck would add 7.8 billion pounds of pollutants to the air each year.
Water transportation experiences fewer accidents, injuries or fatalities than any other surface mode.
Barge transportation operates in a waterway environment that has few crossing junctures and is relatively remote from population centers.
All factors that tend to reduce both the number and severity of casualty incidents.
An independent modal safety study of transporting bulk hazardous substances prepared for the Maritime Administration found that barge spills occur much less often than spills from either tank trucks or tank cars.

Source: U.S. Dept. of Transportation Maritime Administration.

LIFE AT SEA
Mariners live much of their life spent beyond the reach of land. They face sometimes dangerous conditions at sea (Reilly et. al; 2008). Yet men and women still go to sea. For some, the attraction is a life unencumbered with the restraints of life ashore. Sea-going adventure and a chance to see the world also appeal to many seafarers.

Whatever the calling, those who live and work at sea invariably confront social isolation. Findings by the Seafarer's International Research Center indicate a leading cause of mariners leaving the industry is "almost invariably because they want to be with their families." U.S. merchant ships typically do not allow family members to accompany seafarers on voyages. Industry experts increasingly recognize isolation, stress, and fatigue as occupational hazards. Advocacy groups such as International Labor Organization, a United Nations agency, and the Nautical Institute are seeking improved international standards for mariners (Vial, 2007).

Ocean voyages are steeped in routine. Maritime tradition dictates that each day be divided into six four-hour periods. Three groups of watch keepers from the engine and deck departments work four hours on then have eight hours off watch keeping. However there are many overtime jobs to be done daily (Schmidt and Oleik, 2004). This cycle repeats endlessly, 24 hours a day while the ship is at sea. Members of the steward department typically are day workers who put in at least eight-hour shifts. Operations at sea, including repairs, safeguarding against piracy, securing cargo, underway replenishment, and other duties provide opportunities for overtime work. Service aboard ships typically extends for months at a time, followed by protracted shore leave. However, some seamen secure jobs on ships they like and stay aboard for years.

In rare cases, veteran mariners choose never to go ashore when in port. Further, the often quick turn around of many modern ships, spending only a matter of hours in port, limits a seafarer's free-time ashore. Moreover, some foreign seamen entering U.S. ports from a watch list of 25 high-risk countries face restrictions on shore leave due to security concerns in a post 9/11 environment. However, shore leave restrictions while in U.S. ports impact American seamen as well. For example, there is a trend of U.S. shipping terminal operators restricting seamen from traveling from the ship to the terminal gate. Further, in cases where transit is allowed, special "security fees" are at times assessed.

Such restrictions on shore leave coupled with reduced time in port by many ships translate into longer periods at sea. Mariners’ report that extended periods at sea living and working with shipmates who for the most part are strangers takes getting used to. At the same time, there is an opportunity to meet people from other ethnic and cultural backgrounds. Recreational opportunities have improved aboard some U.S. ships, which may feature gyms and day rooms for watching movies, swapping sea stories, and other activities. And in some cases, especially tankers, it is made possible for a mariner to be accompanied by members of his family. However, a mariner’s off duty time is largely a solitary affair, pursuing hobbies, reading, writing letters, and sleeping (Reilly et. al; 2008).

Modern ocean going vessels, typically registered with a flag of convenience, life has changed immensely in the last 20 years. Most large vessels include a gym and often a swimming pool for use by the crew. Since the Exxon Valdez incident, the focus of leisure time activity has shifted from having officer and crew bars, to simply having lounge-style areas where officers or crew can sit to watch movies. With many companies now providing TVs and DVD players in cabins, and enforcing strict smoking policies, it is not surprising that the bar is now a much quieter place on most ships (Vial, 2007). In some instances games consoles are provided for the officers and crew. The officers enjoy a much higher standard of living on board ocean going vessels. Crews are generally poorly paid, poorly qualified and have to complete contracts of approx 9 months before returning home on leave. They often come from countries where the average industrial wage is still very low, such as the Philippines or India.

Officers however, come from all over the world and it is not uncommon to mix the nationality of the officers on board ships. Officers are often the recipients of university degrees and have completed vast amounts of training in order to reach their rank. Officers benefit on board by having larger, more comfortable cabins, table service for
their meals, etc. Contracts average at the 4 month mark for officers, with generous leave. Most Ocean going vessels now operate an Unmanned Engine room System allowing engineers to work days only. The engine room is computer controlled by night, although the duty engineer will make inspections during unmanned operation (Reilly et. al; 2008). Engineers work in a hot, humid, noisy atmosphere. Communication in the engine room is therefore by hand signals and lip-reading, and good teamwork often stands in place of any communication at all.

**SHIPs AND WATeRCRAFT**

Ships and other watercraft are used for ship transport. Types can be distinguished by propulsion, size or cargo type. Recreational or educational craft still use wind power, while some smaller craft use internal combustion engines to drive one or more propellers, or in the case of jet boats, an inboard water jet. In shallow draft areas, such as the Everglades, some craft, such as the hovercraft, are propelled by large pusher-prop fans. Most modern merchant ships can be placed in one of a few categories, such as:

Bulk carriers, such as the Sabrina I (Fig.4), are cargo ships used to transport bulk cargo items such as ore or food staples (rice, grain, etc.) and similar cargo. It can be recognized by the large box-like hatches on its deck, designed to slide outboard for loading. A bulk carrier could be either dry or wet. Most lakes are too small to accommodate bulk ships, but a large fleet of lake freighters has been plying the Great Lakes and St. Lawrence Seaway of North America for over a century.

![Bulk carriers](http://wikipedia.org/wiki/file: Sabrina_.jpg)

**Fig.4:** Bulk carriers (the Sabrina I)


Container ships (Fig.5) are cargo ships that carry their entire load in truck-size containers, in a technique called containerization. They form a common means of commercial intermodal freight transport. Informally known as "box boats," they carry the majority of the world's dry cargo. Most container ships are propelled by diesel engines, and have crews of between 10 and 30 people. They generally have a large accommodation block at the stern, directly above the engine room.

![Container ships](http://wikipedia.org/wiki/file: Resim_057jpg)

**Fig.5:** Container ships


Tankers (Fig. 6) are cargo ships for the transport of fluids, such as crude oil, petroleum products, liquefied petroleum gas, liquefied natural gas and chemicals, also vegetable oils, wine and other food - the tanker sector comprises one third of the world tonnage.
Fig 6: Tankers
Source: http://wikipedia.org/wiki/file: Supertanker_ AbQaiq.jpg

Reefer ships are cargo ships typically used to transport perishable commodities which require temperature-controlled transportation, mostly fruits, meat, fish, vegetables, dairy products and other foodstuffs.

Fig. 7: Reefer ship

Roll-on/roll-off ships, such as the Chi-Cheemaun (Fig 7), are cargo ships designed to carry wheeled cargo such as automobiles, trailers or railway carriages. RORO (or ro/ro) vessels have built-in ramps which allow the cargo to be efficiently "rolled on" and "rolled off" the vessel when in port. While smaller ferries that operate across rivers and other short distances still often have built-in ramps, the term RORO is generally reserved for larger ocean-going vessels(Vial, 2007).

Fig. 7: Roll-on/roll-off ships(the Chi-Cheemaun)
Source: http://wikipedia.org/wiki/file: ChiCheemaun_.jpeg

Coastal trading vessels, also known as coasters (Fig 8), are shallow-hulled ships used for trade between locations on the same island or continent. Their shallow hulls mean that they can get through reefs where sea-going ships usually cannot (sea-going ships have a very deep hull for supplies and trade etc.).

Fig. 8: Coastal trading vessels (coasters)
Ferries (Fig. 9) are a form of transport, usually a boat or ship, but also other forms, carrying (or ferrying) passengers and sometimes their vehicles. Ferries are also used to transport freight (in Lorries and sometimes unpowered freight containers) and even railroad cars. Most ferries operate on regular, frequent, return services. A foot-passenger ferry with many stops, such as in Venice, is sometimes called a waterbus or water taxi. Ferries form a part of the public transport systems of many waterside cities and islands, allowing direct transit between points at a capital cost much lower than bridges or tunnels. Many of the ferries operating in Northern European waters are ro/ro ships.

Cruise ships (Fig. 10) are passenger ships used for pleasure voyages, where the voyage itself and the ship's amenities are considered an essential part of the experience. Cruising has become a major part of the tourism industry, with millions of passengers each year as of 2006. The industry's rapid growth has seen nine or more newly built ships catering to a North American clientele added every year since 2001, as well as others servicing European clientele. Smaller markets such as the Asia-Pacific region are generally serviced by older tonnage displaced by new ships introduced into the high growth areas. On the Baltic sea this market is served by cruiseferries.

Ocean Liner (Fig. 11) is a passenger ship designed to transport people from one seaport to another along regular long-distance maritime routes according to a schedule. Ocean liners may also carry cargo or mail, and may sometimes be used for other purposes. Ocean liners are usually strongly built with a high freeboard to withstand rough seas and adverse conditions encountered in the open ocean, having large capacities for fuel, food and other consumables on long voyages.
Cable layer (Fig. 12) is a deep-sea vessel designed and used to lay underwater cables for telecommunications, electricity, and such. A large superstructure and one or more spools that feed off the transom distinguish it.

A tugboat (Fig. 13) is a boat used to manoeuvre, primarily by towing or pushing other vessels (see shipping) in harbors, over the open sea or through rivers and canals. They are also used to tow barges, disabled ships, or other equipment like towboats.

A dredger (sometimes also called a dredge)(Fig. 14) is a ship used to excavate in shallow seas or fresh water areas with the purpose of gathering up bottom sediments and disposing of them at a different location.
A barge (Fig. 15) is a flat-bottomed boat, built mainly for river and canal transport of heavy goods. Most barges are not self-propelled and need to be moved by tugboats towing or towboats pushing them. Barges on canals (towed by draft animals on an adjacent towpath) contended with the railway in the early industrial revolution but were outcompeted in the carriage of high value items due to the higher speed, falling costs, and route flexibility of rail transport.

Fig. 15: A barge

A Multi-purpose ship (sometimes called a general cargo ship) (Fig. 16) is used to transport a variety of goods, from bulk commodities to break bulk and heavy cargoes. To provide maximum trading flexibility they are usually geared and modern examples are fitted for the carriage of containers and grains (Schmidt and Oleiker, 2004). Generally, they will have large open holds and tween-decks to facilitate the carriage of different cargoes on the same voyage. The crew will be highly competent in the securing of break bulk cargoes and the ship will be equipped with various lashings and other equipment for sea fastening. Ships that fall outside these categories include Semi-submersible heavy-lift ships or OHGC. A cargo ship sailing from a European port to a US one will typically take 10–12 days depending on water currents and other factors (Typical in-transit times).

Fig. 16: A Multi-purpose ship

DEVELOPMENT AND IMPORTANCE OF WATER TRANSPORTATION IN NIGERIA

The development of waterborne transport in Nigeria is induced and facilitated not only by its geophysical physical features in which there are navigable inland waterways, direct access to the Atlantic Ocean, but its economy is also largely depended on the exportation of agricultural products and crude oil and the importation of machinery, equipment and raw materials for its industries and finished goods for its largely populated consumers. Therefore if Nigeria has been without maritime transport and a landlocked State, it will have been difficult and expensive for its residents to engage in international and domestic trade and this would have had adverse effect on its economy. It is maritime transport that relieves other means of transport like rail, road and air and their infrastructure of unavoidable pressure and congestion that they would otherwise have been under had there not been
maritime transport carrying heavy cargo at less expensive cost. This helps to ensure that those modes of transport and their infrastructure are not over stretched. For instance, ferry services from mile two to Apapa and/or CMS reduces traffic-jams on road transportation and the slowing down of economic activities and as a cheap and energy efficient means of transportation. It provides an alternative cheap and reliable means to other modes transportation and decreases the cost of transportation in the movement of oil, sugar, cement, fertilizers, or heavy equipment thereby allowing transport flow from land to sea. Thus, it is the “gateway” for cargoes. But for the availability of maritime transport in Nigeria, Nigeria would not have been talking of reaping the benefits of domestic and regional cabotage principle to its economy. The numerous merchant vessels visiting Nigerian ports economy and those positioned to berth in its ports evidence the importance of maritime transport in Nigeria and it can be correctly be asserted that if there is no maritime transport, there will be no development of the Nigeria shipping industry.

Promotion of trade and commerce
Nigeria heavily relies on external trade to sustain its domestic economy through importation of raw materials and equipment; machinery used by manufacturers and for the exportation its crude oil, agricultural and manufactured products. The essentials of a reliable and cheap means of transportation which the maritime transport offers does not only make the landing cost of these cargoes lower but makes it possible for large tonnage to be carried over long distance and landed in Nigeria thereby reducing the cost of imported and manufactured good since transportation cost is one of the variables costs of production. It also meets the variable needs of shippers and passengers and ship-owners and performs the task that is vital to the sustenance and growth of the Nigerian economy and its international trade. The establishment and running of the export processing zone, Calabar is made possible by the maritime transport made available by the Atlantic Ocean and the Calabar port and meets the socio-economic needs of the country to cope with the challenges of globalization. Such zones are known for attracting export companies that provide employments for indigenes apart from revenue earned.

Revenue and availability of finance
Maritime transport is of significant importance to the Nigerian economy because it generates a lot of revenue to the Federal and State Government which revenue is channeled towards the development of maritime infrastructure and other areas including health and education. The revenue comes from the registration of ships and their mortgages, custom duties, port charges and tariffs realized by the Nigerian Port Authority for the use of its facility by vessels that berth at Nigerian ports, corporate taxes paid by shipping companies, fees for licensing clearing and forwarding agents and freight forwarders and the registration of shipping companies. The National Maritime authority collects 2% statutory charge on gross earnings of shipping companies on imports and exports; while all payments and services offered and rendered to foreign vessels at Nigerian Ports are payable in foreign currency. The National Maritime Authority also fines earring tankers that pollute the Nigerian marine environment, whilst every vessel lifting crude oil pays mandatory rate. All the charges are made possible by Maritime transport. A substantial portion of the revenue collected by NPA and NMA are in hard currency thereby enhancing Nigerian foreign reserves. Therefore, any time there is an hiccup in the maritime sector like bunching or port congestion or labor strikes, it adversely affects the targeted revenues of these government agencies and the government it self. The revenue realized is available for the financing of socio-economic infrastructural developments and reduction of national debt, which in turn makes Nigeria to be credit worthy among the international community.

Promotion of tourism
Maritime transport promotes tourism in Nigeria in the sense that tourist are able to cruise in boats and coastal vessels on the Atlantic Ocean, the Lagos Lagoon and other inland waters and to visit various natural beaches on the Nigerian coastline for the of sight-seeing and relaxation. During Christian and Muslim festivals and public holidays, many residents in Nigeria cruise beaches for picnics, musical show, entertainment and relaxations. Tourism which the maritime transport enhances and facilitates is an avenue through which the State and Federal Government realize revenue which is channeled to developmental projects. For instance the Lagos State Government realizes from users of such beaches like Eleko, Lekki and also Taqua bay substantial revenue from their usage. The hospitality business it has encouraged has also made it possible for guest houses, hotels and resort centers, eg Akodo on Lagos-Epe expressway which provides inter alia, employment, rest and entertainment facilities for the service of tourists and other persons.

Development of related economic activities
Maritime transport has caused the springing up of new development and growth economic activities to service the maritime industry by way of multiplier effects. Shipbuilding and ship repairs yards eg; Niderdock builds coastal vessels of not more than 300gt, tugs, barges, and support for use in maritime transportation. They also repair vessels in Nigeria thereby conserving foreign reserve that would have been spent in purchasing or repairing the vessels in abroad. The shipyards also help in developing indigenous capacity building in shipbuilding and ship repairs and attract business and revenue. Ship surveyors are there because there are ships to be surveyed.
Banks also show interest in financing the acquisition of vessels and in their charter; whilst insurance companies provide various insurance covers to cargo, ships, freight, hull and machinery and other marine risks. The construction industry including the quantity surveyors, building engineers are engaged in the constructions, expansion and repairs and dredging of ports and inland waterways. Information technologists are engaged to supply and maintain computers, marine radio communication and radar systems for safe navigation, pilots and salvos are engaged where necessary while freight forwarders, shipping agents, shipping consultants, maritime lawyers arise to supply the needed services for the maritime sector. The increased turnover of those engaged in the business relating to maritime transport contributes to gross domestic product and increased economic activities.

**Creation of employment and job opportunities**

Maritime transport is also of significant importance to the Nigerian economy because it creates employment opportunities for Nigerians there by ensuring engagement of workers and reduction of social problems induced by employment. The shipbuilding and repairs industry employs workers to meet its various needs, seafarers/seamen; masters, engineers etc are employed to meet the demands of the ship-owners, ship operators and demise charterers for the operation and manning of the vessels. The business made available by maritime transport to the various maritime related Nigerian professionals induces the need for the training of and availability of specialized personnel and manpower to service the maritime industry. It has been argued that the maritime industry in both its public and private sectors provide 10% of the job opportunities available in Nigeria. Its public sector including the Nigerian Custom Services, Immigration, Port police, Nigerian Navy, NDLEA, Standard Organization of Nigeria, Department of State Security Service, Federal Environmental Protection Agency, National Cargo Handling Agency, National Food and Drug Administration (NAFDAC), Nigerian Port Authority, Nigerian Shippers Council, National Maritime Authority and Nigerdock altogether provide about one million jobs. The private maritime sector including shipping companies also furnishes numerous categories of jobs to the national economy.

The availability of jobs in the maritime industry have a multiplier effects on the development of other economic activities such as freight forwarding, dock working, stevedoring operations, towage, pilotage, warehousing, marine insurance, banking, bonded warehousing and cargo handling all of which depends on the maritime sector for survival. It has also induced economic activities in the informal sector such as petty trading, hawking and food vending all of which gainfully engage Nigerians. Without the employment and job opportunities created by the maritime transport. Unemployment situation in Nigeria would have worsened thereby leading to increased crime in Nigeria, which would overburden its economy.

**Industrial growth and development**

Industrialists’ prefer to build factories, industries and sea ports near seaports in other to reduce transportation costs especially in the case of those industries that depend heavily on imported raw materials and equipment in other to manufacture finished goods for domestic and foreign markets. This reduction in transport cost also reduces the cost of their finished goods which in turn increases the sales of their products, leads to high annual turnovers and enhances their growth. Some of the industries are at Apapa and Tin Can Island Ports are by Danote for sugar and cement, Wasa Delmas, Dantata apart from the fishing industries in various jetties. As a result of the Calabar Port, the Calabar Free Trade Zone was set up in pursuant to which a lot of industries including foreign companies have been established and are still being established in other to manufacture for export. Industries engaged in the manufacture of goods for export are also being deliberately sited by seaports in other to take advantage of the attendant low cost of transportation of their manufactured goods and production. It has also being revealed by expert in transportation that 70% of industrial activities on Nigeria are sited around the port cities of Lagos, Warri, Port Harcourt and Calabar and that about 40% of industrial activities are found in the Lagos zone; while the Port Harcourt and Calabar Zone account for 23%. Apapa, Lagos industrial zone has Apapa, Tin Can Island, Ro-Ro container Terminals. Consequently, the presence of ports due to maritime transport stimulates the growth and development of industries, which facilitates the growth of the Nigerian economy.

**Institutional development**

Some institutions have been developed to service the maritime sector and which have been making substantial contribution to the Nigerian economy because of maritime transport. Some of these institutions are involved in the training and education of manpower resources including seafarers and engineers for the maritime sector and include the Maritime Academy, Oron; Nigerian Institute of Transport Technology, Lagos. Other institutes are Nigerian Shippers’ Council for defending and protecting the interest of Nigerian shippers and encouraging shipping practices in accordance with international standards, Nigerian Maritime Authority for coordinating and implementing Nigerian’s shipping policies and matters incidental thereto, Nigerian Port Authority and its subsidiary company for inter alia management and development of ports and infrastructure, Nigerian Navy for protection of Nigerian territorial waters and integrity from external aggression and national cargo handling.
company limited. Without maritime transport there would not have been these institutions and the Nigerian maritime industry and economy would not have benefited from their presence as it is now doing.

**International relations and peaceful co-existence**

Nigeria is today a member of the international and regional maritime organization including International Maritime Organization, United Nation Environmental Programme, Maritime Organization of West and Central African States from which it has been deriving immense benefits, because of maritime transport. Without maritime transport, Nigeria would have been holding merely an observer status in them. Through its membership of these organizations, Nigeria establishes and maintains friendly relations with co-members of them and Nigeria cooperates with them in matters of safety of marine transport and protection and preservation of the marine environment for the benefit of its economy. The establishment and equipment of the Nigerian Navy because of the presence of maritime transport has enabled the Nigerian Navy to play active peace-keeping and peace enforcement roles in West African countries of Liberia and Sierra Leone as a part of the ECOMONG Force thereby increasing Nigeria’s rating internationally in peace keeping. The States concerned have also recognized in that respect, which has enhanced good international relations between Nigeria and them.

Maritime transport can also be used for international patronage by Nigeria allowing some landlocked States free access to export or import goods needed in their economies. Should Nigeria also charged the landlocked countries favorable customs duties lower than charged by its neighboring coastal States, its relationship with the landlocked States will improve tremendously and remain friendly.

**Social- political harmony**

There have been cases of inter-tribal and inter-national marriages involving seafarers of various nationalities conducted on Nigerian vessels or foreign vessels within Nigerian territorial waters because of the presence of maritime transport. This has encouraged the unity of various ethnic nationalities in Nigeria and encouraged socio-political harmony. Foreigners and foreigner seafarers bringing their cultural attitudes to Nigerian port had also enhanced cultural exchanges due to the presence of ports and maritime transport.

**Defense and security**

The defense and security of the Nigerian territory from external hostile espionage from aggressions and incursions through its territorial waters is in its national interests and is facilitated by maritime transport. Under the United Nations Convention on the Law of the Sea, up to the contiguous zone, Nigerian Customs and Immigrations can put their border posts for their activities including checking for smuggling, but maritime transport makes it possible for access to the contiguous zone. Nigeria also has the waterborne transportation need for her Armed Forces for the quick deployment of military personnel, equipment and supplies in times of emergency or crises in Nigeria and as part of the ECOMONG Forces in the West African sub-region because of maritime transport. The Nigerian Navy is able to repel any form of external aggression because of the existence of maritime transport.

**CONCLUSION**

Maritime transport has been of valuable significant importance and would continue to be of invaluable importance to the Nigerian economy. Without maritime transport, all the above contributions it has been making to the Nigerian economy would have been absent. It has been therefore suggested that since it plays a key role in the Nigerian economy, the maritime sector is a mode of transport in which the Federal Government should create the enabling environment necessary for the stake holders to thrive and to monitor and implement set goals in the sector.

**REFERENCES**


