



Ghana

MARITIME REVIEW OF GHANA



1.0 INTRODUCTION

Ghana, formerly known as the Gold Coast, is located in West Africa with a total land surface area of **238,535km²** and a population of 32.83million according to the 2021 Population and Housing Census conducted. There are 16 administrative regions in Ghana and the capital is Accra. Geographically, Ghana shares boundaries with three countries, to the North by Burkina Faso, to the West by Ivory Coast and to the East by Togo. The Gulf of Guinea (Atlantic Ocean) is to the south of Ghana, making the country an important maritime nation.








Fig.1. Map of Ghana.

2.0. GHANA'S MARITIME ADMINISTRATION AND GOVERNANCE.

Ghana's maritime architecture and governance is under the supervision of the Ministry of Transport headed by the sector Minister. The main mandate of the Ministry of Transportation is to formulate policies for the transport sector, establish the regulatory framework

for transport operations, creating the enabling environment for transport investment and the development of an efficient transport system which is modally complementary. The Ministry has 15 agencies and departments under its regulatory supervision which includes;

-  Ghana Maritime Authority
-  Ghana Ports and Harbors Authority
-  Regional Maritime University
-  Volta Lake Transport Company
-  PSC Tema Shipyard

2.1. Ghana Maritime Authority (GMA).

Ghana Maritime Authority was established in 2002 to ensure the provision of safe, secure, and efficient shipping services and the protection of the marine environment from ship source pollution. The Authority is also responsible for the training, examination and certification of seafarers in accordance with the international convention on Standard of Training, Certification and Watch keeping (STCW) for seafarers. The Authority is also responsible for the implementation of other International Conventions

ratified by Ghana in relation to maritime administration, transport and shipping.

2.2. Ghana Ports and Harbors Authority (GPHA).

Ghana Ports and Harbours Authority (GPHA) is a statutory corporation established under Ghana's Provisional National Defense Council Law (PNDCL 160) of 1986 to build, plan, develop, manage, maintain, operate and control all ports in Ghana.

The Authority manages and operates the sea ports of Ghana and various business units in collaboration with a number of private service providers in the areas of vessel handling, stevedoring, transfer, storage, receipt and delivery of containerized and general cargo. The main business Units currently in operation are:

- Port of Tema,
- Port of Takoradi
- Tema Shipyard and Drydock
- Transit Sahelian Liaison Office in Burkina Faso

2.3. Port of Tema

The Port of Tema is the largest port in Ghana. Situated on the eastern coast of the country, it stretches over 3.9 million square metres of land area and receives an average of over 1,650 vessel calls per year.

There are over 50 Shipping lines and agencies that provide both direct and indirect shipping services to and from the Port of Tema. Cargo types handled at the port include Agri bulk, bagged cargo, containerized cargo, dry bulk, forest products, frozen cargo, general cargo, iron/steel, liquid bulk, petroleum products, machinery/equipment and vehicles.

The Port Authority has expanded the existing port, built new terminals, upgraded IT systems and widened operational partnerships and networks. This is reflected by the port's ability to handle increasing volumes of traffic from 7.3 million tonnes in 2003 to 17.4 million tonnes in 2016 due to the expansion works carried out by the Port Authority and its partners, Meridian Port Services (MPS).

Development projects completed in the past years include a new Reefer Terminal, a four (4) berth bulk jetty, one stop service revenue and data centre, the refurbishment of the Transit Terminal and the electronic gating system amongst many others. From December 2016, the Port of Tema's

Quality, Environmental Management and Occupational Health and Safety Systems were certified under the ISO Integrated Management System: QMS 9001: 2015; EMS 14001:2004; and OHSAS 18001:2007.



Fig.2. Port of Tema

2.4. The Port of Takoradi.

The Port of Takoradi in the west of the country is Ghana's first commercial port opened in 1928 to serve the needs of the mining/extractive industries and to handle imports of consumer goods/Liquid products into the country. The city of Takoradi is the regional capital of the Western Region of Ghana, which is about 230 km east of Accra. The Port has six (6) berths with

draughts between 8.4m and 10m in addition to dedicated manganese, bauxite and oil berths.

The port handles 65% of total exports of Ghana with Cocoa, Timber, Bauxite, and Manganese as the export commodities. Major import commodities handled by the port includes; Clinker, Petroleum Products, Wheat, Ammonium Nitrate, Gypsum, Quicklime, Coal and Limestone.

The Port has sheds with storage covered area of 140,000m², an open storage area of 250,000m² and a container holding capacity of 5000teus. There are also private warehouses in and around the Port to augment its capacity.



Fig.3 Port of Takoradi

2.5. Proposed Port of Keta

Ghana is in the process of developing a third commercial port in the coastal town of Keta in the Volta region. The project is part of Ghana's broader plan to develop port infrastructure, including the existing commercial ports of Tema and Takoradi and the proposed inland ports to be located at Boankra and Mpakadan.

The Keta Port project when completed is expected to be a commercial cargo port that can accommodate containerized vessels, bulk cargo, oil and gas shipment, Clinker, Petroleum Products, farm produce, Ammonium Nitrate, Gypsum, Quicklime, Coal and Limestone. The port is also expected to house a shipyard facility for repairs and maintenance of ships.



Fig.4 Site for Proposed Port of Keta

2.6. Tema PSC Shipyard.

The Tema Shipyard is one of the largest shipyards and dry-docks on the African Continent. Strategically located on 48.45 acres of land, it is situated adjacent the commercial Port of Tema as a dry dock and slipway facility. The Shipyard has two (2) graving docks of 100,000 dwt capacity and provides dry docking services, lay berths and fitting out quays and preservation works. It is currently under renovation and some expansion works have begun to face-lift the facility with the state-of-the-art machinery and equipment to meet modern technological demands.



Fig.5 PSC Tema Shipyard

2.7. Regional Maritime University

The Regional Maritime University (RMU), Accra, Ghana, is an international tertiary institution comprising four member states; The Gambia, Sierra Leone, Cameroun and Ghana, which was established in 2007 for maritime education of students, training of marine personnel, research and consultancy and promotion of maritime co-operation. The hallmarks of its operations are meeting international standards, teamwork, discipline and professional integrity.



Fig. 6 Students of Regional Maritime University

3.0. PROSPECTS OF GHANA'S BLUE ECONOMY

The concept of blue economy refers to the sustainable use of the ocean resources to promote growth and development in the economy. The European Union describes the Blue economy as “all economic activities related to oceans, seas, and coasts that cover a wide range of interlinked established and emerging sectors”. Ghana’s Marine ecosystems/ocean covers a coastline of 550 kilometers with abundant valuable ecological

marine resources to promote its socio-economic development. Several economic activities such as fishing both at the domestic (small scale) and commercial level (large scale), production of oil and gas, ports and harbors activities, marine transportation/shipping and eco-tourism (recreational activities) are among the major drivers of economic growth along the coast of Ghana.



Figure 7. Local/artisanal fishing activities in Ghana.



Fig. 8 Local fishing in Ghana.



Fig. 9 Industrial Fishing Trawlers in Ghana

3.1. Oil and Gas Production in Ghana.

Ghana is an up-and-coming player in the oil and gas industry with operations in the upstream (exploration and production), mid-stream and downstream sectors of the economy. Commercial production begun in the Jubilee field in 2010 following initial discoveries in 2007. Ghana's current output of oil production is 150,000 barrels of oil per day with the potential for increased output in the near future. The production of oil and gas in Ghana is carried out by three FPSO units offshore in the Jubilee, Sankofa and TEN oil fields.



Fig.10. FPSO Nkrumah producing 96,000 barrels of oil daily



Fig. 11 FPSO John Agyekum Kuffour (JAK) producing 58,000 barrels of oil daily



Fig. 12 FPSO John Evans Atta-Mills producing about 50,000 bpd

Ghana has enormous potential in the exploitation of its marine resources to generate the needed growth and development in its blue economy drive as

illustrated above. However, the country faces some challenges that threaten the safe and sustainable use of these marine resources.

4.0. CHALLENGES OF GHANA'S BLUE ECONOMY

The maritime sector of Ghana is bedeviled with several challenges which threaten the safe, secure and sustainable usage of its marine resources. Issues of piracy and armed robbery at sea, Illegal, Unreported and Unregulated (IUU) fishing, illicit drug smuggling and human trafficking, illegal bunkering, evasive species, kidnapping of fishers/seafarers at sea and marine/oil pollution exist. Political interference is also another challenge. Political powers interfere in how authorities operate, limiting the effective execution of their mandate.

5.0. MEASURES TO MITIGATE CHALLENGES

The country has taken steps to curtail these challenges and the adverse effects they pose to the country. The efforts being made can be categorized into national, regional and international efforts.

5.1 National Efforts

Ghana has mapped out a comprehensive strategy aimed at addressing issues of maritime security and marine environmental protection called ***The National Integrated Maritime Strategy (NIMS)***.

5.1.1 National Integrated Maritime Strategy (NIMS)

The new National Integrated Maritime Strategy (NIMS) aims to ensure that Ghana's maritime domain will be safe, secure and sustainable in promoting the sustainable exploitation of the country's marine resources to enhance the living and livelihoods of its citizens and engender growth and development. It was drafted after consultations with state agencies and departments, private entities, including those with fisheries, environmental interest groups, security agencies, international partners/agencies, commercial and non-commercial maritime actors, oil and gas industry players, experts from academia, civil society organizations, political parties, opinion leaders and the citizens.

5.2 Regional/International Efforts

Ghana collaborates with other countries in the region to set up measures to curtail the challenges experienced in the maritime sector. A regional multinational maritime coordination center (MMCC) for the maritime zone F in Africa, is set in Ghana. The MMCC Zone F is set up “to be the primary point of contact for credible, accurate, relevant and timely sharing of maritime safety and security information among the member states of Zone F and their international partners”.

5.2.1 EXERCISE OBANGAME EXPRESS AND EXERCISE GRAND AFRICAN NEMO

These two are multinational exercises organized by the United States of America and France respectively. Both exercises use the Yaounde Code of Conduct as the framework for training and simulation exercises. The aim is to counter illegal activities such as piracy, illegal fishing, illicit drug and human trafficking and to coordinate the activities of the coastal states in the fight against these illegal acts along the Gulf of Guinea. These exercises also enable participating countries to train on information sharing among stakeholder organizations and countries to ensure a harmonised

system and well-structured mode of operation. Other European countries join coastal African states for these exercises.



Fig. 13 Exercise OBANGAME EXPRESS



Fig. 14 Participating Stakeholders in a Monitoring Center during Exercise GRAND AFRICAN NEMO

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GHANA MARITIME AUTHORITY
GHANA PORTS AND HARBOURS
GHANA NAVY



Kenya

Overview of Maritime Situation in Kenya

1. Country Profile

Kenya is amongst large economies in Sub-Saharan Africa after Nigeria and South Africa. Kenya is the regional hub providing easy connectivity to the region. It is bordered by South Sudan to the northwest, Ethiopia to the north, Somalia to the east, Uganda to the west, Tanzania to the south, the Indian Ocean is located to the southeast. Kenya is the largest and most advanced economy in East and Central Africa. Its GDP accounts for more than 50 per cent of the region's total and in terms of current market prices. Its economic growth prospects are supported by an emerging middle class and an increasing appetite for high-value goods and services. In the recent past its prospects have grown with improved ease of doing business index.

Kenya is strategically located and a gateway to East and Central Africa with great regional and international connectivity. With its strategic location that borders the Indian Ocean, Kenya is considered as a strategic production and distribution base for Africa, Europe, the Middle East, South Asia and other Indian Ocean Islands.

Kenya is a multi-ethnic, multi-racial and multi-religion country. Persons from different backgrounds peacefully co-exist working, trading and living side by side. The country is also home to very varied geographical landscape from inland lakes, snow-capped mountains, the great rift valley and sun kissed white beaches. It is in this great land that the people co-exist with diverse and rich flora and fauna.



Figure 1: Geographical position of Kenya (Source: Encyclopedia Britannica, Inc.)

2. Kenya's maritime situation

2.1. Overview

The Kenya's Indian Ocean domain occupies an area measuring approximately 245,320 Km² made up of an EEZ of 142,000 Km² and an extended continental shelf of 103,320 Km² (Government of Kenya (GK), 2017). Kenya has a coastline of about 640 kilometres

and runs in a South Westerly direction from the Somalia border in the North, and Tanzania in the South. In addition, the main inland water bodies cover approximately 10,700 square kilometres. Both the sea inland waters areas comprise the maritime domain.

The coastline is adjacent to international shipping routes extensively used for the carriage of oil and other products. Mombasa port is the [largest and key gateway](#) to the eastern and central Africa region – serving Uganda, Rwanda, Burundi, DRC, Southern Sudan, Ethiopia, and northern parts of Somalia.

The Kenyan coastline provides food, recreation and homes. Indeed, maritime transport, tourism and fishing are key pillars in Kenya's socio-economic structure.

2.1.1. Role of Kenya's Maritime Sector to the Country's social and Economic Development

Kenya's maritime sector plays a significant role to the social and economic development of Kenya. The country's strategic location along the Indian Ocean coast and its inland waters endows it with opportunities and potential for transforming into a maritime economy. Maritime transportation being the most economical mode of transport especially for bulky goods handles over 95 percent of Kenya's international trade. This mode of transport enhances the competitiveness of Kenya's exports in the international markets and helps attract foreign direct investment to the country. An efficient and affordable maritime transport will support increased economic activities as envisaged in Kenya's Vision 2030, Kenya's long-term national planning and development strategy.

In Kenya, the potential to boost the national economy by harnessing the vast resources from the Blue Economy has great prospects. The Blue Economy has the potential to contribute 10 per cent of the Gross Domestic Product (GDP), and fully support a workforce of more than 200,000 people, and generate an estimated Sh400 billion in revenue every year. The purpose of the ministry is to therefore enable the country to fully harness the benefits of the marine environment. Maritime transportation forms one of main sectors

of the Blue Economy. The Un Blue Economy Framework Defines Broad Guidance for The Member States, which includes Kenya.

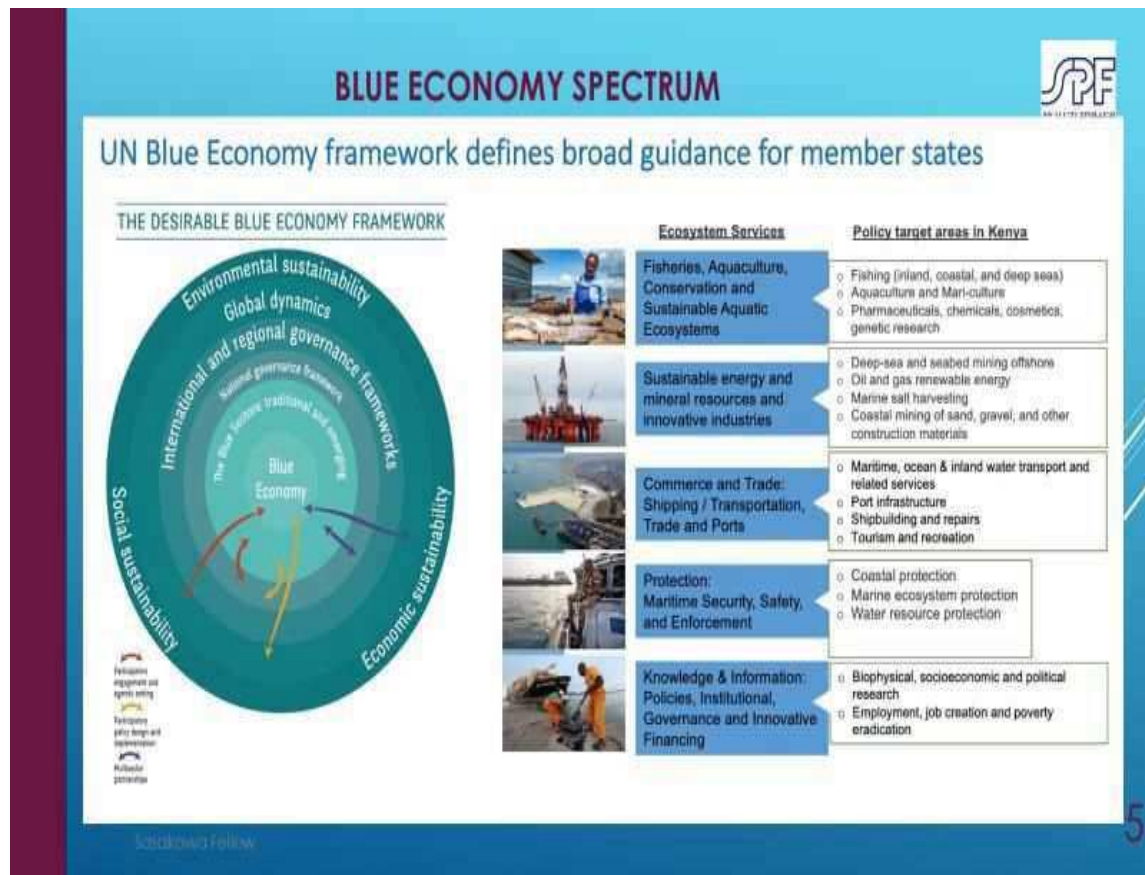
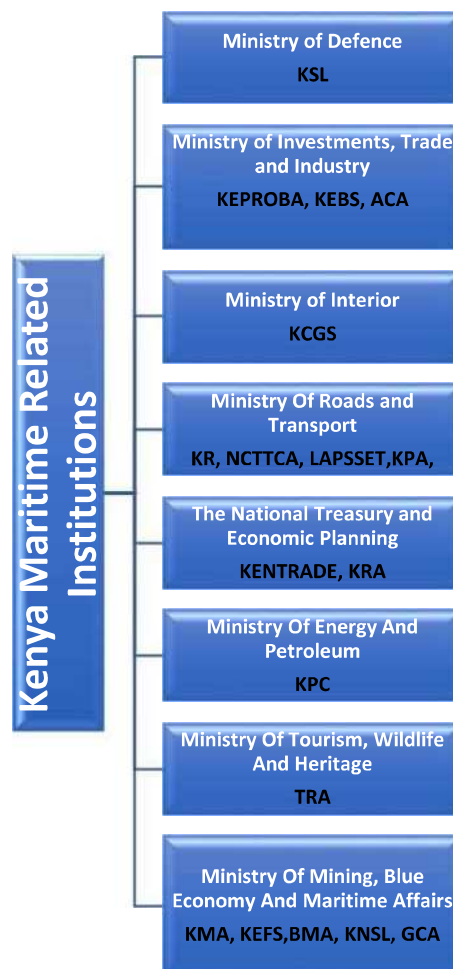


Figure 2: The Blue Economy Spectrum

One of the major activities in the Blue Economy is commerce and trade in around the ocean. Coastal shipping provides mass transit services for cargo and commuters and is an alternative route for large volumes of cargo. Ferry transportation as a coastal service is usually a unique adventure and experience that has great potential to support economy by generating income from tourism as well as facilitating local and regional businesses.

2.2. Kenya's Maritime Sector Organization

Executive order no. 1 of 2022 placed Maritime Affairs under the Ministry of Mining, Blue Economy and Maritime Affairs. Previously, this was governed under the Ministry of Transport, Housing Infrastructure and Public Works. However, this does not mean that all the components of Maritime affairs are housed under one umbrella. The maritime sector in Kenya is mainly managed by the following institutions which are mostly public organizations supervised by Ministries.



Ministry Of Interior and National Administration

This ministry was established to create an enabling environment by ensuring peace and security to the people and property, maintain a credible national integrated information management system, promotion of national cohesion, facilitate administration of justice and provision of correctional services for Kenya's economic development.

1. **The Kenya Coast Guard Service (KCGS)** is an organization under this ministry and a specialized maritime force of the Republic of Kenya, responsible for law enforcement on national waters, including on the oceans, lakes and rivers.

Ministry Of Defence

This ministry was established to defend and protect the sovereignty and territorial integrity of Kenya, assist and cooperate with other authorities in situations of emergency or disaster and restore peace in any part of Kenya affected by unrest or instability as assigned.

1. **The Kenya Shipyards Limited (KSL)** is an organization under the ministry of defense established to build, repair and service water vessels (ships and boats) of the Kenyan Navy, and to build, repair and service ships and boats for the regional governments.

The National Treasury and Economic Planning

This ministry was established to Strengthen financial and fiscal relations between the National Government and County Governments and encourage support for county governments in performing their functions.

1. **The Kenya Trade Network Agency (KENTRADE)** is a state Agency under the National Treasury that facilitates cross border trade, establishes, manages and implements the National Electronic Single Window System (KNESWS). The KNESWS allows parties in trade and transport to lodge standardized information and documents with a single entry-point to fulfill all imports, exports and transit-related regulatory requirements.

Ministry Of Roads and Transport

The ministry of transport is in charge of development and sustenance of the country's transport infrastructure, maritime economy, public works and housing for sustainable socio-economic development.

1. **Kenya Railways Corporation (KR)** is a state corporation mandated to provide an efficient and effective rail and inland waterways transport.

2. **Northern Corridor Transit and Transport Co-ordination (NCTTCA)** was established to oversee the implementation of the northern corridor agreement, to monitor its performance and to transform the Northern trade route into an economic development corridor and making the corridor a seamless, efficient, smart and green Corridor. The Northern corridor agreement has defined 11 Protocols on strategic areas for regional cooperation relating to Maritime Port Facilities, Routes and Facilities, Customs Controls and Operations, Documentation and Procedures.
3. **LAPSSET Development Authority (LCDA)** is a State Corporation mandated to plan, coordinate, sequence, and provide leadership and direction in the operations and implementation of the LAPSSET Corridor programme.
4. **Kenya Ports Authority (KPA)** manages and operates the Port of Mombasa and all scheduled seaports along Kenya's coastline that include Lamu, Malindi, Kilifi, Mtwapa, Kiunga, Shimoni, Funzi and Vanga. The Authority manages Inland Waterways as well as Inland Container Depots at Embakasi, Eldoret and Kisumu and the ferry services.

Ministry of Investments, Trade and Industry

The ministry of Investments, trade and industry promotes international trade and investment, pursues flagship industrial development initiatives, enhance business enabling environment, supports entrepreneurs and SME development, enhances domestic trade and promote Public-Private Sector Dialogue.

1. **Kenya Branding and Exports Promotion Agency (KEPROBA)** is a state agency whose mandate is to implement export promotion and nation branding initiatives and policies to promote Kenya's export of goods and services.
2. **Kenya Bureau of Standards (KEBS)** is a state agency mandated to develop standards and quality control for development, Metrology, Conformity Assessment, Training and Certification services. The agency also provides facilities for the testing and calibration of precision instruments, gauges and scientific apparatus, for the determination of their degree of accuracy by comparison with standards approved by the government.
3. **Anti-Counterfeit Authority (ACA)** is a state agency which Combats counterfeiting, trade and any other dealings in counterfeit goods. The agency also coordinates with national, regional or international organizations involved in combating counterfeiting.

Ministry Of Energy And Petroleum

The Ministry of Energy and Petroleum generates policies that are designed to create an enabling environment for efficient operation and growth of the sector. It manages the energy sector in Kenya and sets the strategic direction for the growth of the sector and provides a long term vision for all sector players.

1. **Kenya Power Company Limited (KPC)** is a state corporation which provides efficient, reliable, safe and cost-effective means of transporting petroleum products from Port of Mombasa to the hinterland.

Ministry Of Mining, Blue Economy And Maritime Affairs

This is a relatively new ministry was established for the promotion of Maritime and Shipping Industry, Maritime Transport Management, promotion of marine Cargo Insurance and implement the management and Research in Support of Kenya 's Shipping Industry. The ministry also co-ordinates development of national oceans and blue economy strategy and policy, and development of Policy, Legal, Regulatory and Institutional Framework for the Fisheries Industry and the Blue Economy in Kenya.

1. **Kenya Marine and Fisheries Research Institute (KMFRI)** is the national research institution which undertakes research in marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine related research in order to provide scientific data and information for sustainable development of the Blue Economy.
2. **Kenya Fisheries Service (KeFS)** is a body corporate established to Conserve, Manage and Develop Kenya Fisheries and Aquaculture Resources. The fisheries also ensure the appropriate conservation development of standards on management, sustainable use, development and protection of the fisheries resources through formulation of the implementation of policies regarding the conservation, management and utilization of all fisheries resources;
3. **The Kenya National Shipping Line (KNSL)** is the national carrier for seaborne trade.
4. **Kenya Maritime Authority (KMA)** is the semi-autonomous agency in charge of regulatory oversight over the Kenyan maritime industry. As the pacesetter of the Kenyan maritime industry, the Authority strengthens national maritime administration through enhancement of regulatory and institutional capacities for safety and security, fosters effective implementation of international maritime conventions and other mandatory instruments on safety & security, promoting

maritime training, coordinating Search and Rescue, preventing marine pollution and promoting preservation of the marine environment as well as promoting trade facilitation and maritime investments.

5. **Bandari Maritime Academy (BMA)** is a national Centre for Maritime Education and Training which provides Competent Maritime related courses, develop academic and vocational skills, and provides the maritime labor needed in Kenya.
6. **Government Clearing Agency (GCA)** is the national agency whose function involve the clearing and forwarding of ocean, air and land cargo principally being offered only to government interest cargo.

3. KENYA'S MARITIME SAFETY AND SECURITY AND ENVIRONMENTAL PROTECTION

3.1 Overview

Kenya's waters provide significant economic opportunities. As a member of the Indian Ocean Region (IOR), the country has always aimed at ensuring the security of its citizens and trade activities in the Indian Ocean. The IOR is of geostrategic importance as it confers tremendous opportunities and challenges to the coastal states of the Indian Ocean. Kenya domesticated all conventions and treaties that it has consented to and endorsed, this means that the country draws from international sources of law as advanced by the treaties and conventions to enforce maritime security, in addition to its local laws.

Some of the maritime security conventions that Kenya has ratified and thus have become part of Kenya Law include; International Convention for the Prevention of Pollution of the Sea by Oil 1954, UNCLOS, 1982, UN Convention on Climate Change (UNCCC), 1992, Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention), 1988, Convention on Fishing and Conservation of the Living Resources of the High Seas (CFCLR), 1958, International Convention for the Safety of Life at Sea

(SOLAS, 1974/88), International Ship and Port Facility Security (ISPS) Code 2002, amongst others.

To ensure the sustainable exploitation of resources, the Kenya Government has enacted following legislations: Climatic Change Act, 2016, the Forest Conservation and Management Act, 2016, Water Act, 2016 and the Mining Act, 2016 (KNBS, 2017). To mitigate against crimes at sea, Kenya enacted the following legislations: Anti-corruption and Economic Crimes Act, 2003, and Prevention of Organized Crime Act (POTA), 2010. Kenya's 2017 Defence White Paper assigns the Indian Ocean Strategic importance while in the same vein it recognizes that the zone face threats and vulnerabilities to security emanating from the sea.

3.2 Other Key Milestones achieved include;

1. Establishment and operationalization of the Kenya Coast Guard Service: Development of the National Maritime Security Strategy to promote a safe, secure, environmentally sound, efficient, and sustainable shipping sector.
2. Implementation of the Eastern and Southern Indian Ocean regional accord on operation, coordination and information exchange
3. Establishment of Marine Fisheries Monitoring, Control and Surveillance Committee (MFMCS) to combat illegal, unregulated and unreported fishing,
4. Development of National Marine Spatial Plan (NMSP) – (Ongoing)
5. Development of a National Maritime Security Risk Register (NMSRR)
6. Ratification of major International Conventions which include; MARPOL, OPRC, LONDON CONVENTION, AFS, BALLAST WATER MANAGEMENT, NAIROBI CONVENTION, BUNKER CONVENTION, and CLC CONVENTION.
7. Development of the National Oil spill contingency plan whose purpose is for Release of Hydrocarbons to the Onshore and Off-shore Areas of Kenya is to delineate responsibilities for preparing for and responding to any significant spill on land, sea and non-navigable waters in Kenya.

These prospects are, however, undermined by a wide range of maritime security challenges such as piracy, marine pollution, illegal, unregulated and unreported (IUU) fishing, as well as over-exploitation of maritime resources. The nature of these security concerns has resulted in maritime security becoming an emergent priority for the Kenyan government.

3.3 Threats to Kenya's Maritime space:

The prospects and aspirations of Kenya's maritime domain are faced with both composite and extremely dynamic traditional and non-traditional security threats that threatens the Country's national security. The main threats to Kenya's maritime sector are as follows:

- Maritime terrorism including boat borne IEDs
- Illegal, unregulated, and unreported fishing
- Drugs Trafficking
- Illegal Weapons
- Illegal immigrants' people
- Illegal wildlife trade
- Emerging threats including cybercrime against ships and port facilities
- Aerial drones
- Attack on ships using limpet mines.
- Marine pollution from land and ships

4. The Blue Economy in numbers

Kenya's Blue Economy includes: maritime transport, fishing, aquaculture, tourism, shipbuilding and repair, maritime education and training, marine cargo logistics, maritime law, safety and security, marine salvage, international shipping, transport, energy, bio-prospecting, offshore mining, marine biotechnology, blue data, aqua-business, cargo consolidation, marine insurance, bunkering, ship handling, port agency, port related services, water sports, as well as marine and maritime governance. Fisheries, shipping and maritime affairs, port infrastructure, tourism and environment are the core sectors in Blue Economy

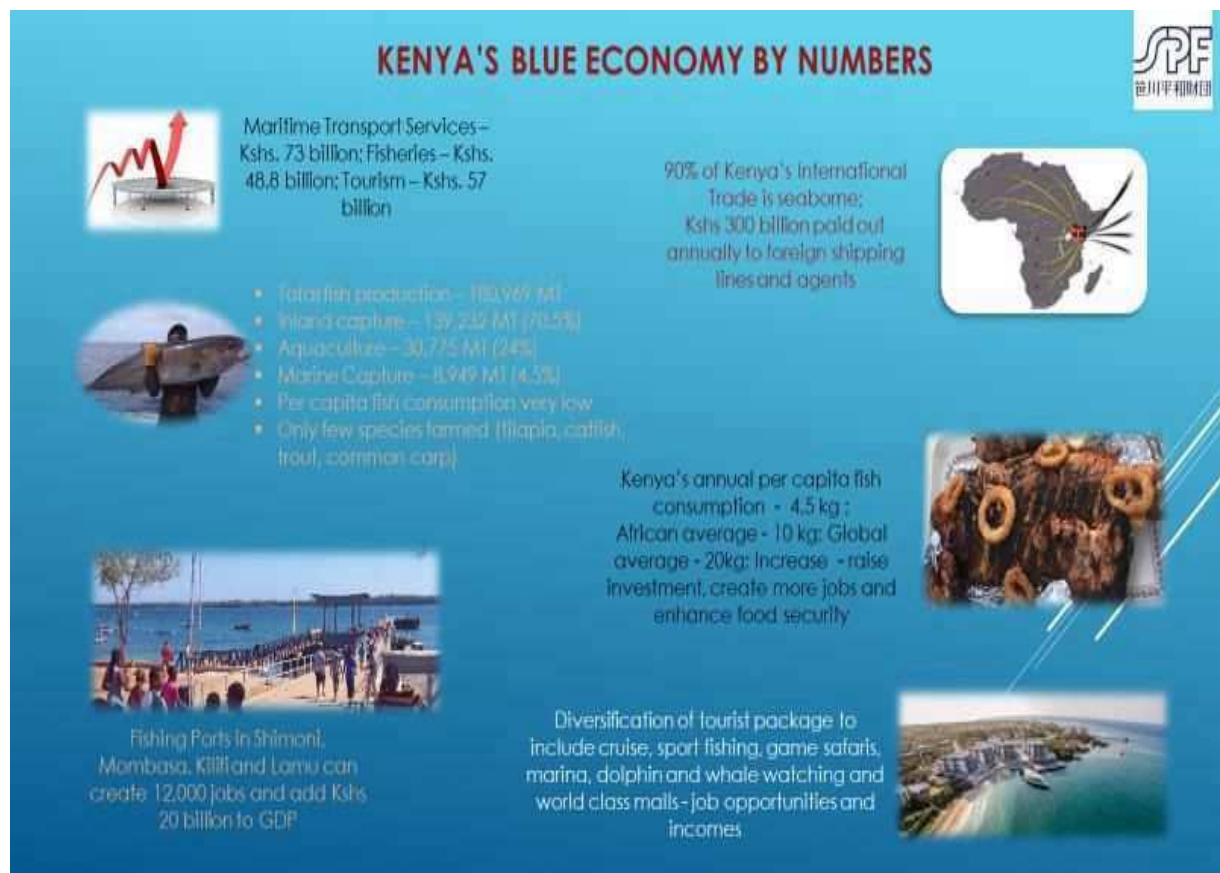


Figure 3: Kenya's Blue Economy in Numbers

It is estimated that the blue economy, if used properly, has the potential to inject up to 4.8 billion US dollars to Kenya's economy and create over 52,000 jobs in the next 10

years. This, combined with a sustainable approach, should make a difference in the protection of maritime ecosystems.

END



Morocco

- COUNTRY REPORT -

Towards the Development of a Moroccan Blue Economy Strategy

1) Country Overview:

The Kingdom of Morocco is located in Northwest Africa, right on the edge of the African continent, bordering Algeria to the east, Mauritania to the south, the Atlantic Ocean to the west, and the Mediterranean Sea to the north. The Moroccan coast extends over 3,500 km in length, with an exclusive economic zone of 1.2 million km², which makes the country a maritime nation by excellence.

The country is endowed with a strategic geographical position, as it links Europe to Africa and ensures the transition between the Mediterranean Sea and the Atlantic Ocean. Currently being at the center of an international dynamic evolution, its maritime space is rich in natural resources in terms of landscapes, habitats, and biodiversity, and are of global importance for the national economy.

According to a survey carried out by the High Commission for Planning in 2021, the population of Morocco is around **37.08** million people. In terms of the national-added value, the GDP of the country amounted in 2021 to **\$142.9 billion**, of which nearly 2% was related to blue economy activities. However, this figure seems insignificant compared to the embedded national potential to be unlocked.

- Map of Morocco:





2) Economic Pillars of the Country:

In recent years, the Moroccan economy has witnessed substantial reforms with the aim of setting a national development scheme, able to ensure inclusive growth, create jobs and reduce social and spatial disparities. This shift, though in a context marked by a notable international financial and economic crisis, has contributed to consolidating the gains without compromising the stability of the fundamental balances and strengthening the resilience of the national economy. In terms of achievements, suffice it to mention that the different sectoral strategies mainly on agriculture, industry, and services launched have gradually induced considerable changes in the economic structure.

The **agriculture sector**, which includes mainly outputs from farming, fishing, and forestry, represents **12%** of the national GDP. With regard to **farming activity**, it is becoming less dependent on weather conditions, in particular, due to the efforts deployed within the framework of the **Green Moroccan Plan**, launched in 2008. In terms of farming activities, It is to be noted that this field has gone through a profound change with the implementation of the structuring actions that have immensely boosted considerable investments, enabling domestic agriculture to reduce its dependence and its vulnerability to climate hazards and drought, mainly through an increase in plantations with high value, at the expense of cereals. Also, it is instrumental to highlight that the integrated projects carried out within **the Halieutis Strategy**, which constitute the country's fisheries roadmap, have been valuable in terms of the management of the marketed species (80%) and the enhancement of the valorization of sea products.

Regarding the industrial sector, which represents around **26%** of the national GDP, the development of 2.6% per year was mainly driven by the processing industries which constitute 17.2% on average of the total value added. In this respect, the sector of phosphate and derivatives, one of the important fields, has achieved remarkable growth with respect to exports and Investments. This promising trend has confirmed the leadership of the country in the international market as being the third producer in the world behind the United States and China.

Also, the country has strived to consolidate the competitive position of the national industry in the global value chain via the emergence of new sophisticated high-value industries, as reflected by the considerable growth of automotive and aeronautics.

There has been a notable increase in the exports of the national automotive sector, which ranks first in terms of export activities in 2021. The installed production capacity is 700,000 vehicles per year, while the local integration rate in 2021 reaches 63%, with the objective of increasing it to 80% over time.

As for the **service sector** which represents **51.5%** of the national GDP, it has achieved an increase of **4%** on average per year due to the major reforms, initiated within the sectors of information technology, communication, banking, and services rendered to enterprises. Tourism, considered another significant driving sector for the national economy, has shown an average annual growth of over 5%, stimulated by a variety of new projects established under the framework of "Vision 2020".

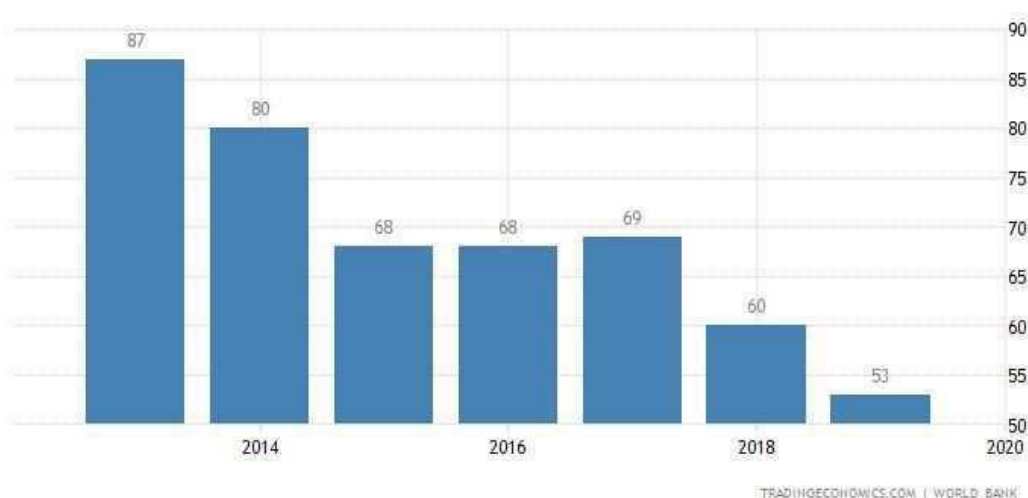
3) Main Trade Features and Commercial Partners:

According to the latest figures, the country's exports have reached **\$47.02 billion** in 2021. The main commodities subject to export are clothing and textiles, automobiles, electric components, inorganic chemicals, transistors, crude minerals, fertilizers (including phosphates), petroleum products, citrus fruits, vegetables and fish. The main export partners are mainly Spain (23.4%), France (21.1%) and Italy (4.6%)

Regarding the imports, they have reached in 2021 **\$60.3 billion**, with main commodities including crude petroleum, textile fabric, telecommunications equipment, wheat, gas and electricity, transistors and plastics. The main import partners are Spain 15.7%, France 13.2%, China 9.1%, US 6.4%, Germany 5.9%, Italy 5.4% and Turkey 4.4%.

The recent figures for October 2022 show that the Moroccan economy has been marked by a continued increase on exports of phosphate products of (+63%), automobiles (+36.7 %) and textiles (24.4%). However, the balance of trade has continued its negative trend between august 2021, due mainly to the increase of the energy bill.

When it comes to ease of Doing Business, Morocco is ranked **53** among 190 economies in the ease of doing business, according to the latest World Bank annual ratings. The rank of Morocco improved to 53 in 2019 from 60 in 2018.



4) Ocean Governance Framework:

- Being a party to **the United Nations Convention on the law of the sea (UNCLOS 1982)** since 2007, Morocco has been actively involved in the negotiations for the conclusion of an **agreement on a legally binding international instrument on marine biodiversity within areas beyond national jurisdiction (BBNJ)**
- **The GFCM 2030 Strategy** for sustainable fisheries and aquaculture in the Mediterranean and the Black Sea constitutes an efficient roadmap at the national level
- The Adhesion on May 2022 to **the Port State Measures Agreement (PSMA)** expresses the strong political will of the country to reinforce the existing legal framework aiming to prevent and fight IUU fishing
- The country is contributing actively to the review process related **to the Barcelona Convention and its protocols**
- The involvement of the country in **the FAO Blue Port Initiative (BPI)** initiative will foster the managerial and technical capacities of port operators and create a network of blue ports
- During the « **One Ocean Summit** » (Brest, 2022) and the **UN Ocean Conference** (Lisbon, 2022), Morocco have reiterated its political will to endeavor towards the preservation of the ocean and urged countries and international organizations to promote the exchange of technical and scientific research capacities
- The updated version of the **Nationally Determined Contribution (NDC)** reflects the commitment to reducing the effects of climate change.
- **The 2030 National Port Strategy** is a comprehensive roadmap for the development of the port sector
- **The National Coastal Plan** (2020) aims essentially to reconcile environmental protection and economic activities
- The “**clean beaches Program**” (1999) monitored by the Mohammed VI Foundation for Environmental Protection (M6FEP) aims to protect beaches and coastlines
- **A National Emergency Plan for the Fight Against accidental Marine Pollution (PUN)** has been established to protect Moroccan hazards from potential hazards. This contingency plan is assessed through regular exercises (SIMULEX)
- **The Halieutis Strategy** has paved the way toward the elaboration of a set of best practices within the fisheries and aquaculture sectors, in particular with regard to Mediterranean fishing activities
- The implementation of the **National Sustainable Development Strategy (2017)** seeks a transition towards a green and inclusive economy by 2023
- In terms of energy transition objectives, Morocco aims to increase production capacity for solar, wind, and green hydrogen so as **to achieve as a whole a green energy share of 52% by 2030**
- **The New Development Model (2021)** aims to release energies and regain trust to accelerate the march of progress and prosperity
- The National strategy for the development of scientific research by 2025 is an institutional roadmap for the promotion of research and innovation

- **The National Institute for Fisheries Research (INRH)**, has carried out an ambitious research and development system since 2010, through, among other things, the assessment of fish stocks and the impact of climate change on fishery resources (200 million DH)
- **-The specialized center of valorization and technology on marine products (CSVTPM)** of Agadir contributes to the development of seafood processing technologies and the promotion of fish products and ensures the monitoring and anticipation of technological innovation
- **The Higher Institute of Maritime Studies (ISEM)** has contributed to Morocco's inclusion on the International Maritime Organization's (IMO) whitelist and to the recognition of the Moroccan certificates by the European Commission

5) Legislation on Matters of Sustainable Development:

The commitment to Sustainable Development has materialized through the new constitution of 2011 which considered sustainable development as a right for all citizens and the framework law 99-12 on the Charter of the Environment and Sustainable Development and which calls on the Government to draw up a National Strategy for Sustainable Development (SNDD).

Adopted by the Council of Ministers on June 25, 2017, the SNDD aims to accelerate Morocco's transition towards a green and inclusive economy by 2030. To do this, this instrument has identified 7 major challenges, namely:

- 1- Consolidation of the governance of sustainable development
- 2- Success of the transition to a green economy
- 3- Improving the management and development of natural resources and the conservation of biodiversity
- 4- Accelerating the implementation of the national policy to combat climate change
- 5- Attribution of particular vigilance to sensitive territories
- 6- Promotion of human development and the reduction of social and territorial inequalities
- 7- Promotion of a culture of sustainable development

6) Administration of Maritime Affairs:

The management of fishing vessels is under the responsibility of the Department of Marine Fisheries, whereas the merchant fleet is steered by the Directorate of Merchant Marine, which is part of the Ministry of Transport and Logistics. Pursuant to the Decree No. 2-06-472 of 2 of August 4, 2008, the duties of the Directorate of Merchant Marine include, inter alia:

- The elaboration of the shipping policy
- The registration of the merchant fleet
- Follow up on the various economic and technical studies concerning the maritime transport and leisure segment and the related activities
- Contribute to the implementation of the National SAR Plan, in coordination with the concerned administrations
- Contribute to the implementation of the various established national plans for the prevention and combating of marine pollution
- Education and Training of seafarers
- Monitor and manage maritime traffic in the strait of Gibraltar

7) Involvement in the IMO Mandate:

The Kingdom of Morocco is member of the International Maritime Organization since 1962. The country has been always elected as a member of IMO's council since 1992. Convinced of the important role and objectives of IMO, the Kingdom of Morocco has ratified a considerable number of conventions related to safety of life at sea, prevention of pollution and preservation of the marine environment, training and certification of seafarers and security of ships and ports.

Whilst fully subscribing to the IMO's efforts, particularly with regard to the capacity-building of maritime administrations in developing countries, Morocco has been reiterating its determination to collaborate and work consistently with other Member States in the development of technical assistance programs for the region.

Morocco, as a flag State, ensures compliance of Moroccan vessels with international and national standards, and as a port State contributes actively to the activities of the Mediterranean Memorandum of Understanding on Port State control (MedMoU). To support this MoU, the country has been hosting and administering since 1997 the Information Center related to this regional agreement.

With regard to port and maritime security, the country ensures that its ships, ports and port facilities comply with the provisions of the ISPS Code. In this respect, all Moroccan ports and port facilities are certified in accordance with this Code. Also, bearing in mind the importance of reinforcing the domestic legal framework on the subject matter, the Kingdom has continued its endeavor to give effect to the existing international regulations in force by the IMO mandatory instruments into the national regulatory body.

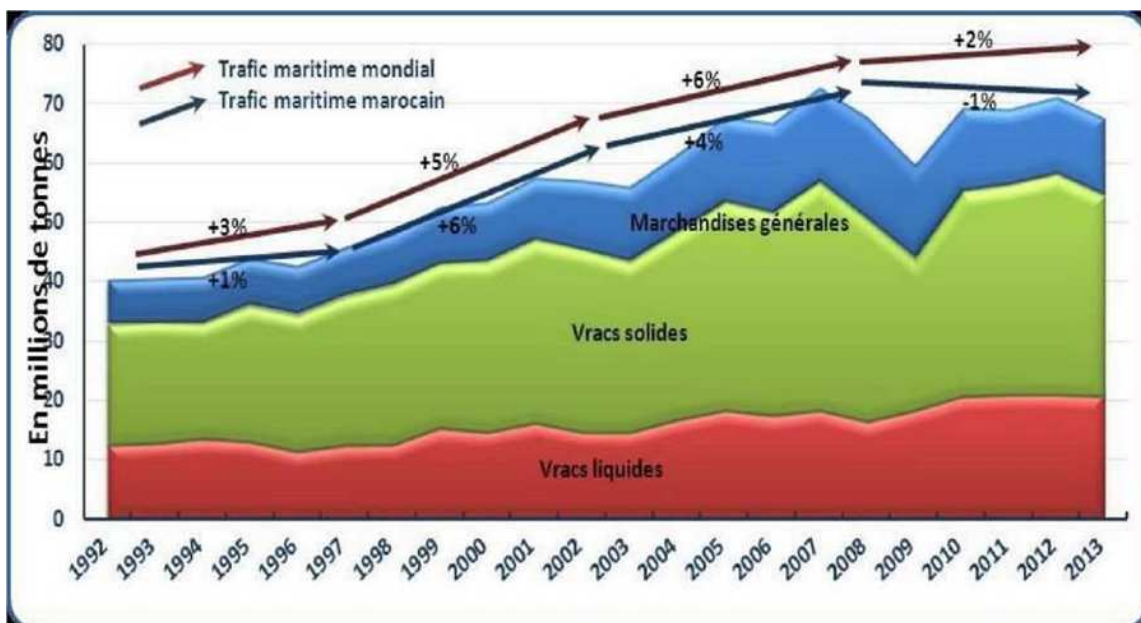
It's to highlight the valuable contribution of the country to the efforts deployed by IMO in terms of setting a cleaner shipping, as Morocco has been actively involved in various initiatives in the field , such as the project entitled "Transforming the International Maritime Transport Sector to Reduce Carbon Emissions through Energy Efficiency Improvement -GLoMEEP", aimed at increasing knowledge and understanding technical and operational measures related to the energy efficiency of ships and to develop national, regional and global capacity-building partnerships to improve the energy efficiency of shipping.



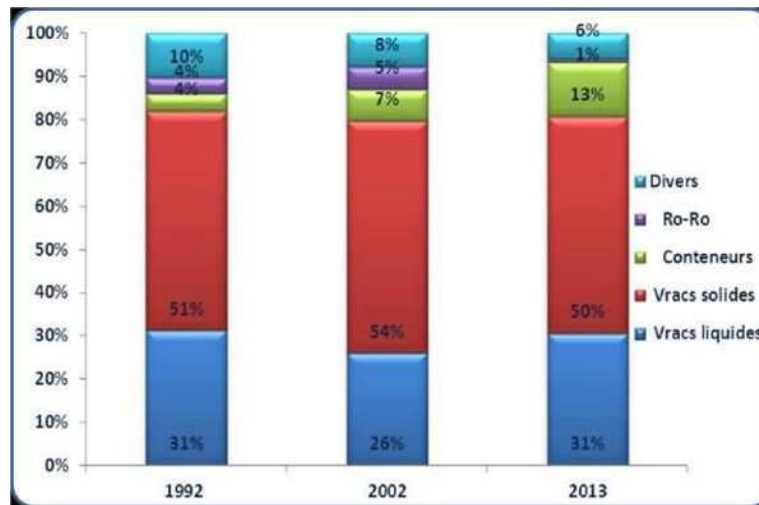
8) Maritime Transport:

- Shipping Trends:

The national maritime traffic, which was following a positive trend during many years by a positive and steady growth of the exchanges on the various types of goods, has accused since 2007 strong fluctuations. Thus, after an annual growth of 9% in 2007, the maritime traffic fell by 7% in 2008 then by 12% in 2009, further to the world economic crisis, before an important resumption becomes apparent in 2010 by +16%. The traffic stagnated in 2011 (-0, 2 %) before getting its upward trend back in 2012 (3%) and in 2013 (+9%). This evolution, which is due, essentially, to that of the solid bulks goods which represent more than 50 % of the maritime traffic and other goods (in particular the containerized goods the part of which increased by 12 % in 2013 against 4 % in 1992), was compatible with the movements of the world maritime traffic. Indeed, the world and Moroccan maritime traffics globally followed the same trend of growth over the period between 1992 and 2012.



Specifically, an insight into the structure of marine traffic from 1992 to 2013, shows that there has been approximately a steady evolution of solid and liquid bulk, which has turned respectively around 50 and 30% of the total traffic, whereas the container segment has recorded a continuous evolution from 4 to 13%.



Source: Elaboration DEPF, data ANP et CNUCE

It is to highlight that Morocco makes an exception in Africa with one of the shortest times spent by vessels in ports in the world. As an illustration, Tanger Med port is the best-connected port in Africa. It is expected overall that the annual growth of maritime trade worldwide will slow to 2.4% between 2022 and 2026, compared to 2.9% over the past two decades.

- Ports:

Morocco's ports which are the key assets for linking the logistics chain to international trade are contributing to a large extent to the economic and social development of the country. Conscious of these considerations, the Kingdom has established an ambitious strategy to ensure a harmonious development of ports, in coordination with sectoral strategies and spatial and environmental planning policies. The strategy adopted in 2012 by the Ministry of Equipment, Transport and Logistics in the horizon of 2030 focuses on six central regional ports hubs specialized in specified activities such as the one of Abda Doukkala dedicated to heavy industries.

Governance of the port sector

The governance of the port sector is shared mainly by two institutional entities, namely the Directorate of Ports and Maritime Public Domain, which is part of the Ministry of Equipment and Water and the National Ports Agency(NPA).

Missions of The Directorate of Ports and Maritime Public Domain:

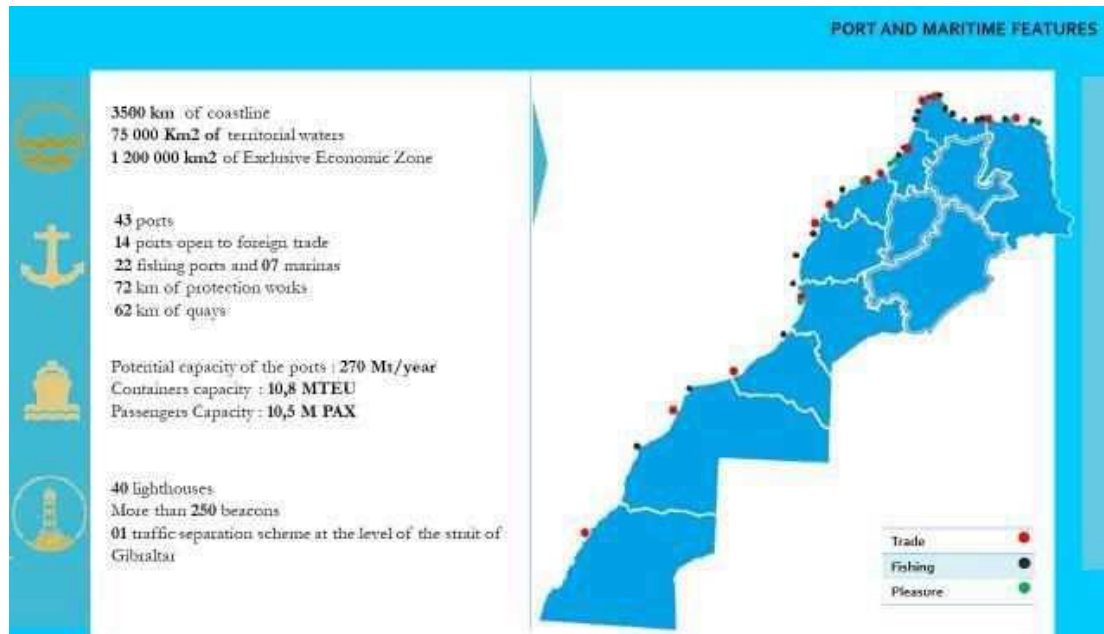
- The development and monitoring of the implementation of the Ministry's policy in the port sector and the maritime public domain.
- The construction of new ports and maritime infrastructures.
- The management, protection and enhancement of the maritime public domain.

The National Ports Agency (NPA): It is a public institution with a legal personality and financial autonomy and which is under the technical supervision of the Ministry of Equipment and Water. The agency is subject to the financial control of the State that is applicable to public institutions in accordance with current legislation

The National Port Agency which is entrusted by law with the role of the port Authority, carry out the following missions:

- Ensuring port management and proper procedure of the port police;
- Monitoring compliance with safety and operating rules under current laws and legislation;
- Optimizing the use of the port facility to improve port competitiveness and simplify procedures and modes of organization.

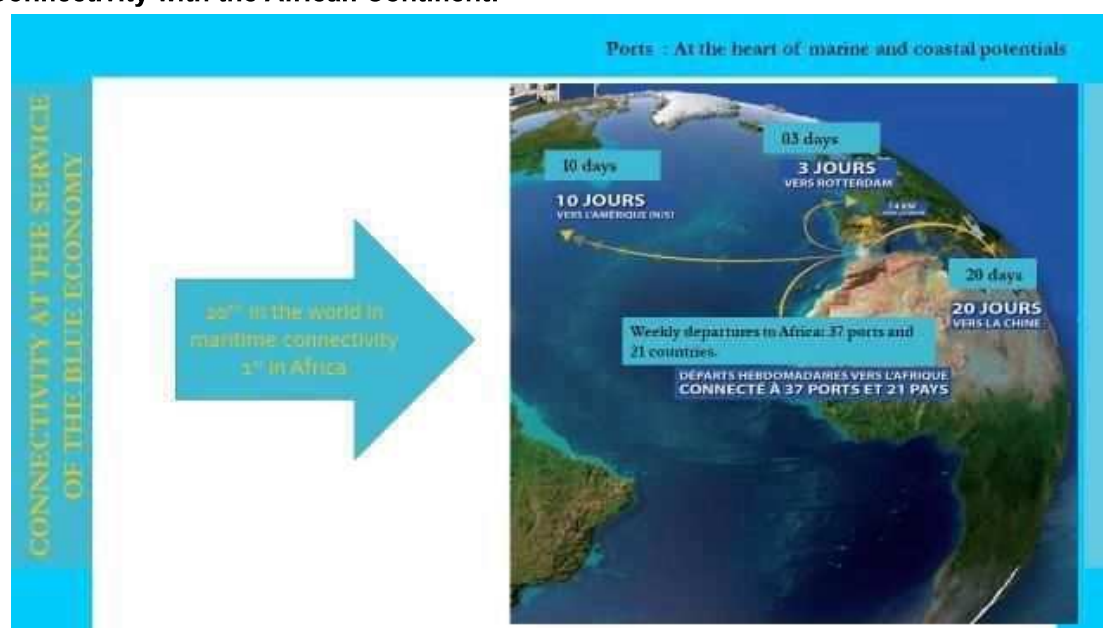
- Ports Typology:



- Targets of the 2030 Port Strategy:



- Connectivity with the African Continent:



The structural strategy of the port sector by 2030 is gradually being implemented in the light of the development of the port landscape, which is reflected in the implementation of structuring projects, mobilizing an investment envelope of more than 60 billion dirhams, particularly for the construction of new port complexes. Several projects are planned within the framework of this strategy, such as the mineral port of Safi on the Atlantic.

According to the connectivity index (Liner Shipping Connectivity Index) measures Tangier Med which welcomes ships of large capacity is currently connected to 161 ports and 63 countries on five continents.

- Some Mega Future Port Projects:

New Port of Dakhla Atlantic

- This mega project of strategic importance for West Africa and for the southern provinces of the country will support the economic, social, and industrial development of the region.
- It will provide the region with modern logistics able to attract investment opportunities and boost connectivity, particularly with respect to African ports
- **industrial-logistic zone, a commercial exchange zone, and another dedicated to the promotion of maritime fishing activities**
- Main works: trade basin equipped with an oil berth, a coastal and deep-sea fishing basin and a ship repair yard
- Expted area : 1650 hectares
- Expected cost : 12,5 billion DH
- The timeline: 2021-2028
- The first terminals will be in service in 2029



40 km from the southern city of Dakhla located on the Atlantic coast of the country



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New Port Nador West MED

- Initiated in 2016, the port of Nador West MED envisages the creation of capacities for bulk and energy products, in addition to container terminals;
- This infrastructure seeks the economic, social, and industrial development of the oriental region of the country;
- The construction of the first port module is expected to be finalized **before the end of June 2024**;
- - a main breakwater: 4300 m
- two container terminals: 1620 m, 600 m
- An oil terminal with three oil berths with a depth of -18 m
- a bulk carrier terminal: 360 m quay and a depth of -20m
- a miscellaneous terminal with a depth of -11m
- The EBRD granted a loan of 100 million euros to the Nador West Med company (NWM).



30 km from the northern city of Nador located on the Mediterranean coast of the country



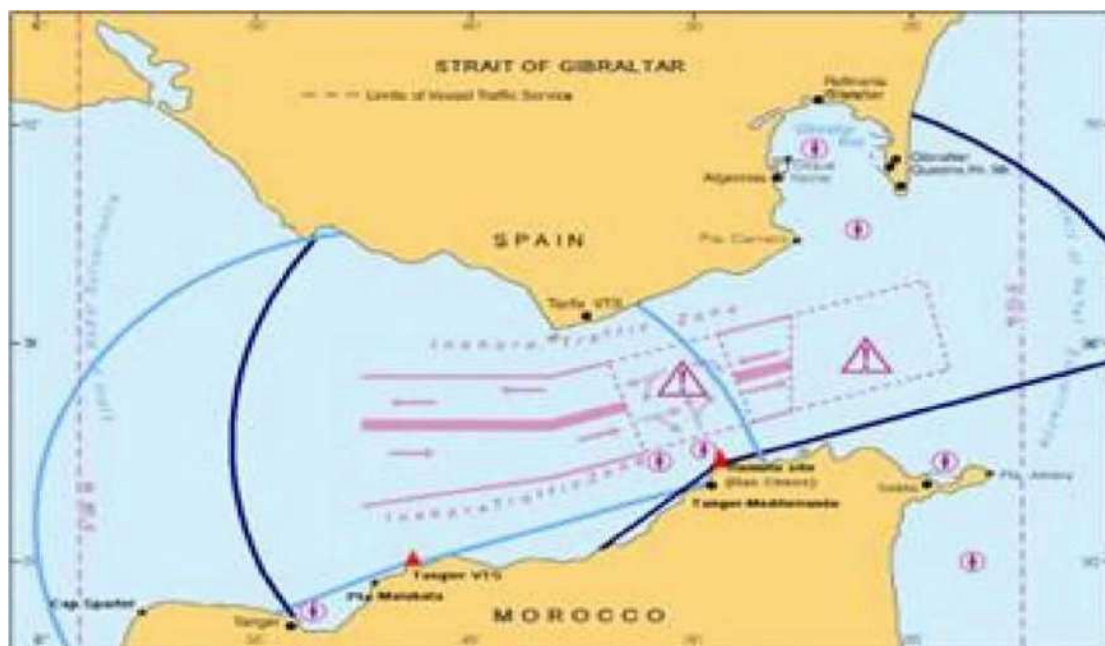
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- Maritime Safety and Security:



In accordance with its obligations as a coastal State, Morocco has established a coastal VTS operational in the Strait of Gibraltar since 1 December 2010, this latter which ensures the surveillance and safety of navigation in accordance with the adopted organization's guidelines in this regard.

Morocco has also installed along its coasts a network of AIS coastal stations, supported by a database for tracking ships carrying hazardous materials. In addition, a VMS scheme is in operation for monitoring of fishing vessels in Moroccan waters.



Maritime signaling is a major element of the overall concept of maritime safety, enabling all navigators to position themselves and avoid dangers. To this end, Morocco as a coastal State ensures the safety of navigation by the development, management, maintenance of maritime beacons, lighthouses and aids to navigation along the Moroccan coasts, as well as those marking routes in accordance with the rules of the IMO and the International Association of Maritime Signaling (IALA).

Pursuant to the provisions of Chapter V of the SOLAS Convention, Morocco also ensures the provision of nautical information by collecting, analyzing and distributing notices to mariners and sailing instructions. For this purpose, a national mobile application integrated into a Geographic Information System (GIS) for the publication and automatic updating of information on the availability of aids to navigation, nautical notices and incidents at sea has been set up to provide real-time alert information.

In terms of port and maritime security, Morocco as a port state approves security assessments and plans. To this end, it shall issue certificates of conformity to the ISPS Code for ships, ports and port facilities. Thus, all Moroccan ports and port facilities are certified. Morocco is aiming in the future to consolidate its national legal and regulatory background to make it in line with the existing mandatory international regulations prescribed by IMO.

As a flag state, Morocco has recognized by decree a number of classification societies (BV, LR, ABS, DNV, NKK...) to issue certificates on behalf of the Administration, in accordance with the rules of the international conventions, such as the load lines convention. These societies are allowed to carry out the necessary regulatory verifications (Initial, intermediate.), and issue the relevant certificates for the ships flying the Moroccan flag. The domestic legislation complies in this respect with the Directives concerning the authorization of organizations acting on behalf of the Administration, in virtue of resolution A.739 (18), adopted by the International Maritime Organization.

Through the creation of its own national hydrographic service, Morocco aims to ensure its autonomy in the production and edition of nautical charts and works and securing of navigation and access routes to the Kingdom's ports.

9) Prevention of Marine Pollution:

Bearing in mind the crucial importance of the conservation and the protection of its marine environment, Morocco has ratified the majority of IMO conventions related to the prevention of marine pollution from ships including Annex VI of MARPOL and the Ballast Water Management Convention (BWM 2004).

In order to enhance the competencies of the human element with regard response and control against accidental marine pollution, Morocco organizes every two years a Simulation exercise.

It is to be noted that Morocco has established a National contingency plan for fighting against accidental marine pollution (PUN), in order to cope with massive accidental pollution or serious threats of pollution which may affect marine waters under the sovereignty or national jurisdiction and the Moroccan coast (and its related interests).

The National Contingency Plan for the Prevention of Marine Pollution which consists of a set of necessary information, directives and instructions enabling the public authorities to prevent or combat in best conditions any marine pollution by oil and other harmful substances, threatening the marine environment and the national coastline, aims inter alia:

- The establishment of an appropriate detection and warning system in the event of massive marine pollution
- The rapid, effective and coordinated organization of preventive and control actions and the definition of the main elements, in particular through the rational management of the means of fighting, the distribution of responsibilities and tasks, the identification of the most sensitive areas to be protected as a priority and storage sites for the recovered products
- International cooperation and facilitation of mutual assistance if such assistance is requested or if Morocco is engaged in agreements to which it is a party in international cooperation
- The accounting management of operations for possible future compensation
- the management of the stock of anti-pollution products and equipment and the updating of the inventory of available personnel and equipment
- Training of qualified personnel in the prevention and control of massive marine pollution by hydrocarbons and other harmful products

In terms of protection of underwater cultural heritage, Morocco has deployed a considerable effort to build an inclusive strategy, coherent and voluntary in this respect with a pool of officials and experts duly recognized on the international scene. Recently and as recognition for his outstanding performance by the international community, Morocco has been elected President of the Scientific and Technical Advisory Council of the UNESCO Convention on the Protection of the Underwater Cultural Heritage of 2001.

It should be stressed either that the organization of the 22nd Conference on climate change **COP22** in Morocco in 2016 is considered a recognition by the international community of the achievements carried out by the country all over these years towards the creation of a safer and cleaner environment, pursuant to the principles of sustainable development laid down by the United Nations SDG 2030.

It's to bear in mind that organization of the action of the state at sea and which is ensured by the Royal Navy, devotes an appreciated part to some other public activities, in particular:

- Maritime and Port security
- Protection of the marine environment
- Combating illicit trafficking by sea
- Fisheries surveillance and control

To carry out these missions, important types of naval means are deployed throughout the Moroccan maritime zones as well as some radar stations located all over the national coast.

- Plastic Pollution:

5. Interactions between marine litter and the blue economy (2)

- The adhesion of the country to the international efforts aiming to end plastic pollution as reflected through the adoption of the UN Environment Assembly **resolution 5/14** ((2022) is an impetus to promote the inception of more valorization and recycling projects;
- Initiatives such as the “**Moroccan Supermarkets tackling Single-Use Plastics**” (MOSSUP) project has been partnering with Moroccan supermarket chains since early Spring 2021, helping the country to take important steps to address plastic pollution.



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10) Renewable Energy:

8. Marine renewable energies (1)

- The National Ports Agency has carried out an electrical audit on 15 ports, mainly small ones in order to identify the source of energy savings, with due consideration to the study of integration of renewable energy alternatives;
- A partnership agreement has been convened with the Solar Energy Research Institute (IRESEN), in order to provide support and technical assistance in the field of green hydrogen and its derivatives;
- Conclusion of a partnership with the Moroccan Agency of Sustainable Energy (Masen), aiming to speed up the transition process;
- Consultations are underway with the World Bank to launch a study on the bunkering of ships with clean fuel within Moroccan ports.



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8. Marine renewable energies (2)

- Installation of photovoltaic lighting in the ports covered by the NPA;
- Feasibility study for supplying cruise ships with electrical energy at the port of Casablanca. The objectives to be achieved are the following:
 - Assess the state of supply at quayside and the needs of electrically powered cruise ships;
 - Carry out an international benchmark on the practices of supplying cruise ships with electrical energy;
 - Study the technical and economic viability of supplying cruise ships with electrical energy.



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11) Search and Rescue

As a party to the 1979 convention on rescue at sea (SAR), the Kingdom of Morocco has embarked on the path of developing its structures of search and rescue at sea, covering a strategic maritime area of over 1 million km² within which operates a significant number of merchant ships, fishing and leisure vessels.

Hence, the country has established a national scheme of search and rescue, provided with a set of means including equipment and skilled human resources, organized within a process of planning and coordination of interventions at sea. The SAR process, mainly initiated by the National Maritime Rescue Coordination (MRCC) located in Bouznika (Rabat) is based upon:

- 21 rescue boats and 21 semi-rigid lifeboats distributed along the coast of the Kingdom
- A number of air and sea units belonging to other national bodies that can be deployed when needed in accordance with the National Sar Plan (PNS)
- At the national level, programs have been launched in terms of capacity reinforcement, training of SAR personnel and acquisition of units dedicated to SAR missions
- At the regional level, it is essential to underline that Morocco has launched a cooperation scheme under the framework of the initiative <<5+5>> and has been the host of the Regional Maritime Rescue Coordination Center of the West African region, which covers respectively the maritime zones of Morocco, Mauritania, Senegal, Gambia, Cape Verde, and Guinea Bissau



12) Seafarers and Maritime Education and Training

Through its schools and training institutes, Morocco is highly involved in the maritime training of the human element. Apart from the specialized institutes in training merchant navy officers, mainly the Higher Institute for Maritime Studies, those dedicated to fisheries training (Institutes of Maritime Fisheries) and the Royal Naval School, the country has an extensive network of vocational training centers.

In this respect, it's to underline that the Higher Institute for Maritime Studies has launched during recent years a process of reforms of the educational programs and infrastructures in place. In fact, a notable endeavor has been carried out in terms of providing the Institute with a number of simulators, for bridge and machine respectively and proceeding to the renovation of its practical training laboratories. However, more efforts are to be done in upgrading the various laboratories, particularly those of electronics and electrical engineering, with a view to improving the research potential of the university, which may be crucial to attract donors likely to finance research works in issues with high added value.

To achieve its main objectives, the Institute has strived to set a modern system of governance, based on a quality approach covering the entire system (training, administration, support ...), so that all stakeholders are fully involved within the process. Already certified ISO 9001 version in 2008, the Institute is targeting for the next four years to extend its perimeter of quality to the environment and the management.

In this respect, new technologies have been introduced in all maritime training establishments through the use of different types of simulators, linking the acquisition of knowledge with the demonstration of skills, pursuant to a competency-based approach.

The GMDSS and basic training on maritime safety has also been prioritized and integrated into training programs in accordance with the provisions of the STCW and STCW-F Conventions ratified by Morocco.

Within the framework of South-South cooperation, Morocco welcomes annually candidates from countries of the African continent who follow their training in the various maritime and port institutes.



These candidates constitute 30% of the trainee intake. Among the countries covered by this cooperation, Senegal, Togo, Mauritania, Congo, Democratic Republic of Congo, Benin and Djibouti.

Academic Year	Number of Graduates				Total
	Deck officer First Class	Marine engineer First Class	Lieutenant Long Course	Lieutenant (Engineering) First Class	
2011-2012	13	20	21	23	77
2012-2013	23	26	22	25	96
2013-2014	18	14	22	18	72
2014-2015	9	13	13	10	45
015-2016	10	15	24	17	66

Number of Graduates of the Higher Institute for Maritime Studies since 2012

Audits and Certifications

	IMO audit Recognition by IMO: audit carried out on May 20-21, 2015 (Whitelist).
	EMSA audit European recognition: audit carried out on May 10-11, 2017.
	IALA audit Accreditation for providing IALA training sessions : audit done on July 2018.
	ISEM is a partner of WMU MoU signed on June 19, 2019.
	ISO audit ISO Certification 9001/2015, on April 26, 2019. Validity: April 2022

Major partners of the ISEM



13) Non-Seafarers Maritime Education and Training

As for the port sector, Morocco has a specialized training institute (IFP) for continuous training aimed at improving the competence of human resources for national and international needs. Several international partnerships and cooperation actions have been undertaken or are underway, including the training of Aids to Navigation managers in partnership with IALA and IMO.

In order to reinforce the technical capacity of the personnel in charge with navigational safety, Morocco has set up a partnership framework with the International Association of Maritime Signaling

(IALA), for the first time in Africa, through a training Session for Level 1 Aids to Navigation Managers at the Port Training Institute (IFP), in July 2017.

The organization of this internationally renowned training has required at the first place an accreditation of the IFP by the national competent, authority as a training organization that is recognized worldwide for the organization of such kind of trainings.

The session was attended by 15 participants from various Moroccan public and private firms, operating in the field of maritime signaling. Among the participants, there have been three African nationals coming respectively from Coast Ivory, Benin and COMORES Islands and which have been sponsored by IMO.

In the same perspective of consolidating a strong and tight relationship with IALA, Morocco hosted in 2018 the third pre-conference of this organization with the aim of accompanying it in its structural project, towards a change of status and a new positioning within the maritime world.

14) Moroccan Fisheries and Aquaculture:

- Fisheries:

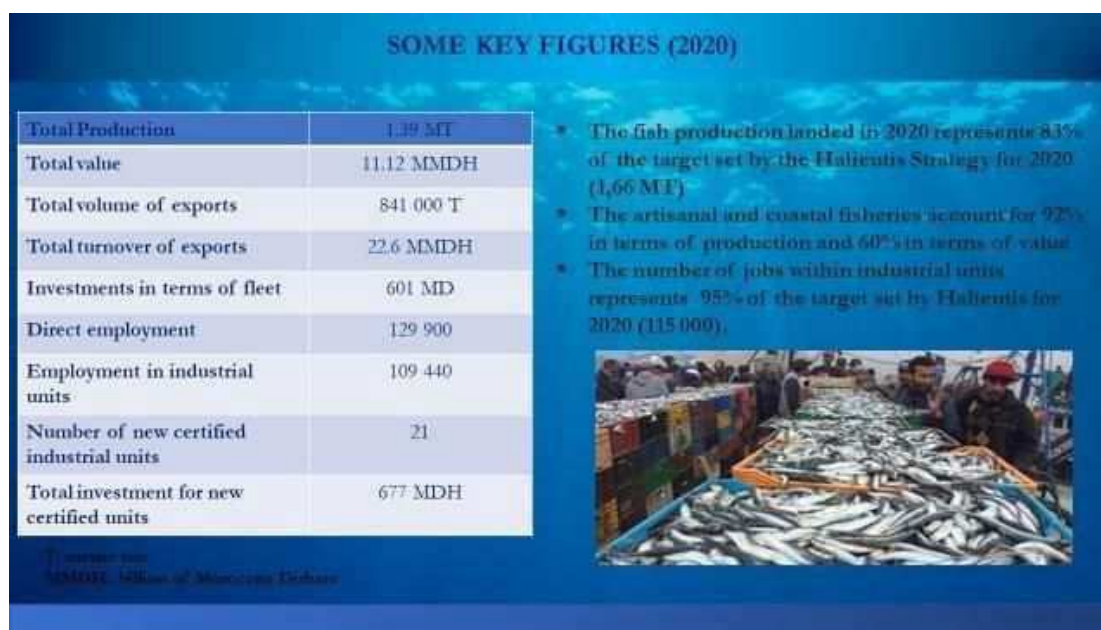
With a total coastline of more than 3500 km on the Mediterranean Sea and the Atlantic Ocean, Morocco has an exclusive economic zone of more than one million km, The high biodiversity of the Moroccan coast is characterized by the presence of around 600 species, among them 60 species are commonly exploited. In terms of volume, 85% of small pelagic species are concentrated in the central and southern Atlantic. As for the distribution of the catches, 7% of the total harvest comes from the Mediterranean, 9% in the North Atlantic, 30% in the Central Atlantic and 55% from the South Atlantic. This potential puts Morocco among the world leaders in the international market for fishery products, in particular for certain products such as canned fish, fish meal, and Agar-Agar.

Given the economic and social importance of the fisheries sector in the Moroccan economy, a national strategy under the name of « Halieutis » has been launched since 2009, setting a number of objectives to be achieved by 2020. This ambitious and comprehensive roadmap has sought upgrading and modernization of the different segments of the fisheries sector as well as improving its competitiveness and performance within the international market for fish and fishery products.

THE SUBSTANCE OF THE HALIEUTIS STRATEGY (2009-2020)		
The Halieutis strategy which was initiated by the Department of Maritime Fisheries in 2009 has focused on 16 projects covering the three dimensions of the strategy:		
Sustainability	Performance	Competitiveness
A 1- Strengthen and share scientific knowledge	B 1- Develop infrastructure and landing equipments	C1- Facilitate to industrials the access to raw materials
A 2- Develop fisheries management based on quotas	B2- Dedicate port spaces to the fisheries and ensure their effective management	C2-support the orientation of manufacturers in the most buoyant markets-
A 3 -Adapt and modernize fishing effort	B3-Strengthen the attractiveness of the port fish market and CAPI	C 3- Create 3 competitiveness clusters in the North, Center and South of the Kingdom
A 4 -Make aquaculture a major impetus for growth	B4- Structuring and energizing the local market around wholesale and retailing	

From a practical perspective and in order to ensure a sustainable exploitation of fisheries resources, a set of management plans based on biological, environmental, technical and socio-economic consideration have been put in place regarding a number of endangered species such octopus, small pelagic fish, swordfish and crustaceans.

In this respect, the Halieutis strategy has set various management measures, to mention inter alia, introduction of quotas, spatio-temporal closure, regulation of bycatch and the use of vessel monitoring systems. It is significant to underline the great endeavor carried out in terms of deterring and combating Illegal, Unreported and Unregulated fishing, mainly through the enactment of a specific law in this regard.



Due to different hindrances faced by the artisanal fisheries, in particular with regard the conservation and the commercialization of the catches, the Department of Marine Fisheries has initiated in coordination with its partners a national program for the construction of fishing villages (VDP) and equipped landing points (PDA), along the Moroccan coasts (40 units)

The canning industry has experienced a great development over the years, due to the continual improvement of manufacturing technologies, the abundance of resources, and the diversification of products. This trend has permitted the Kingdom to acquire a renowned position in international markets in this specific segment.


- Aquaculture:



15) Protection Through Marine Protected Areas:

Marine Protected Areas (MPA)

The strategy of creating a network of MPAs in Morocco will contribute to achieving broader objectives in terms of the conservation of marine resources and the restoration of marine habitats and ecosystems and balanced sustainable development.



Objectives :

- Rebuilding of fish stocks;
- Ensure the sustainability of fish stocks;
- Protection of the most fragile ecosystems (biodiversity and habitats);
- Support the traditional ways of life of local coastal communities;
- Reinforcement of the resilience to climate change and environmental problems;
- Deal with conflicts between the different stakeholders.



Establishment of 03 MPAs for fishing purposes- 2014

03 boats have been dedicated to carrying out control and surveillance



Three Ministerial orders have been adopted as relevant legal instrument related to these MPAs

Placing beacons within MPAs

2020-2022 Study for the installation of signaling and beaconing equipment at sea of three marine protected areas for fishing purposes (In the process of being finalized)





Nigeria

SASAKAWA FELLOWSHIP AFRICAN REGIONAL MEETING REPORT:

A REVIEW OF THE NIGERIAN MARITIME INDUSTRY

COUNTRY OVERVIEW

Nigeria is located in West Africa, and has a population of about 211 million people, which makes it the most populous country in Africa and the seventh most populous country in the world. It shares borders with Benin, Niger, Chad, and Cameroon.

The country is divided into 36 states and one Federal Capital Territory. Nigeria's physical geography is diverse, with areas of savanna, tropical rainforest, and coastal plains. The Niger River, the third-longest river in Africa, flows through Nigeria, and the country also has several large lakes, including Lake Chad. The official language is English, and the currency is the Nigerian naira. Nigeria is known for its diverse culture, music, and literature.

Nigeria has the largest economy in Africa, with a Gross Domestic Product (GDP) of \$448.1 billion in 2020 according to the World Bank. The country's economy is heavily dependent on the oil sector, which accounts for over 80% of Nigeria's exports and government revenue. However, Nigeria has made efforts to diversify its economy by investing in other sectors such as agriculture, manufacturing, and technology. Apart from oil and gas, Nigeria is also rich in coal, iron ore, tin, limestone, lead, and many other natural resources.

Agriculture is an important sector in Nigeria's economy, employing over 60% of the workforce and contributing to 22% of the country's GDP. The country's main agricultural products include cassava, yam, maize, rice, sorghum, and millet. Nigeria is also a major producer of cocoa, palm oil, and rubber.

Nigeria's maritime industry is a vital sector for the country's economy, with its ports serving as major gateways for trade and commerce. The country has seven significant seaports, located in the west and south of the country. In 2020, the country's ports handled approximately 133.4 million metric tonnes of cargo, with imports accounting for over 80% of the total cargo. The ports also facilitate exports of various commodities, including oil and gas, agricultural products, and solid minerals.

Nigeria's marine ecosystem comprises the Atlantic Ocean, the Gulf of Guinea, and the Niger Delta region. It is rich in biodiversity and is home to a wide variety of flora and fauna, including over 1,000 fish species, 14 marine mammal species, and five species of sea turtles. The coastline is about 853 km long and includes sandy beaches, rocky shores, estuaries, and mangroves.

KEY SECTORS IN THE NIGERIAN MARITIME INDUSTRY

There are different sectors which make up the Nigerian maritime industry, including the following:

- Shipping and Ports
- Oil and Gas
- Fisheries
- Transportation
- Tourism

SHIPPING AND PORTS



Lagos Port



Tin-Can Port



Rivers Port



Onne Port



Delta Ports



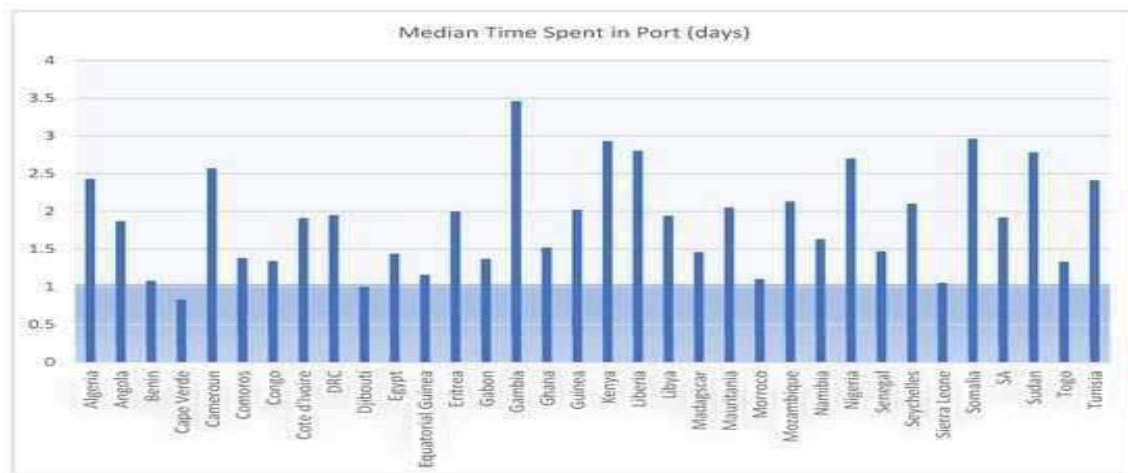
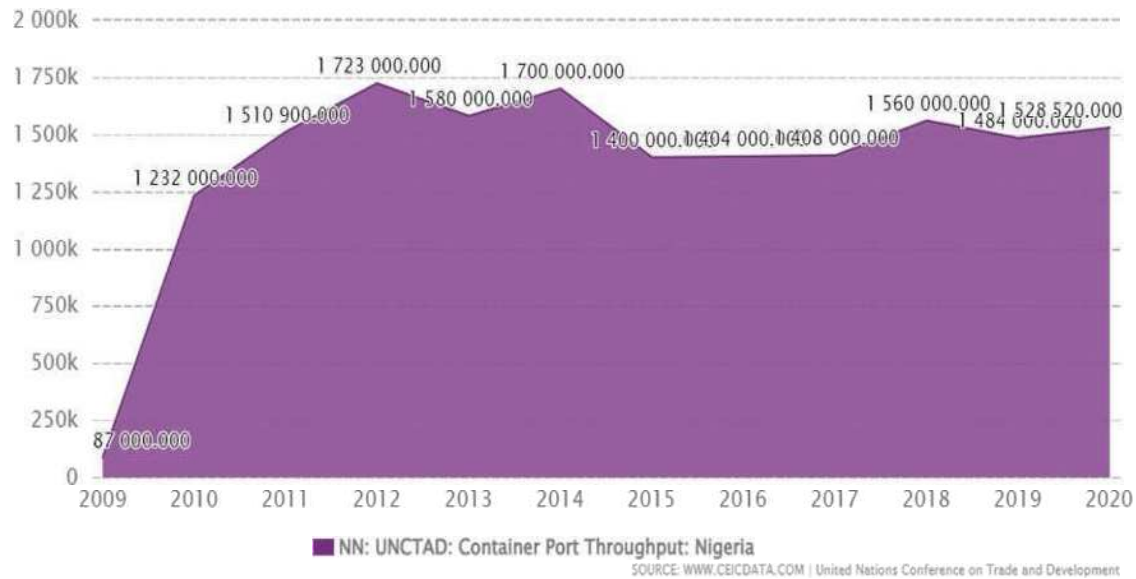
Calabar Port

Six major seaports in Nigeria

The Nigerian shipping and port industry is a vital component of the country's economy. According to the Nigerian Ports Authority (NPA), over 90% of Nigeria's international trade is conducted through seaports. The country has six major seaports, including the Lagos Port Complex, Tin Can Island Port, Onne Port, Calabar Port, Delta Port, and Rivers Port. In 2020, the Nigerian Ports Authority reported a total cargo throughput of over 80 million metric tonnes, which was a 2.2% increase from the previous year.

The Nigerian government has implemented several initiatives to enhance the efficiency of the ports, such as the automation of operations and the construction of new terminals. These initiatives have helped to reduce challenges such as congestion, high shipping and handling costs, and inadequate infrastructure. According to UNCTAD, the container throughput numbers is on the increase since

2021 and cargo dwell time in the ports is above average and has improved in recent years.



Average cargo dwell time in Nigerian Ports compared to selected African countries

Seaport Services in Nigerian Ports

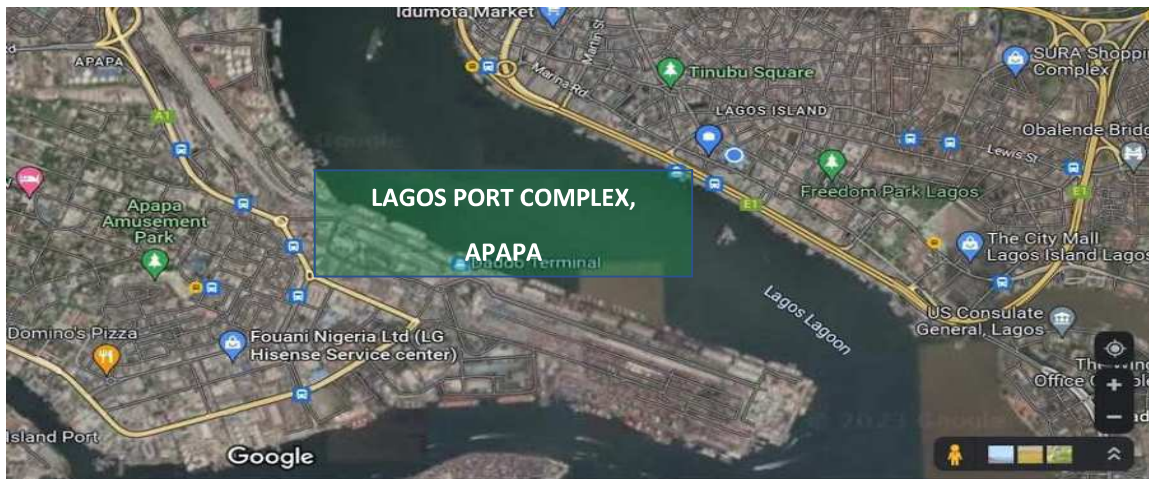
Seaports provide a range of services, including cargo handling, storage, and transportation. They also provide customs clearance, quarantine services, and other regulatory services necessary for the import and export of goods. In recent years, the Nigerian government has made significant investments in the seaport

infrastructure to improve their efficiency and capacity. This includes the construction of new port terminals, upgrading of existing facilities, and the implementation of modern technologies to improve port operations and reduce cargo processing time. Services offered by Nigerian Ports can be categorized into the following:

- Harbour services
- Cargo handling
- Marine services
- Health Safety and Environmental services
- Security services
- Commercial services
- Engineering and technical services
- Lands and estates services

Lagos Port Complex, Apapa

This is the largest and oldest port in Nigeria. It is located in Apapa, Lagos State, which is the commercial hub of Nigeria. The port was founded in 1913 and the first four deep-water berths were constructed in 1921. The Apapa Port is equipped with state-of-the-art cargo handling equipment and facilities, which makes it cost-effective and customer-friendly.



It is well-connected by rail, water, and road transportation modes. Furthermore, the port boasts a four-wheel gate with a height of about 8 meters, which gives it an advantage in handling oversized cargo.

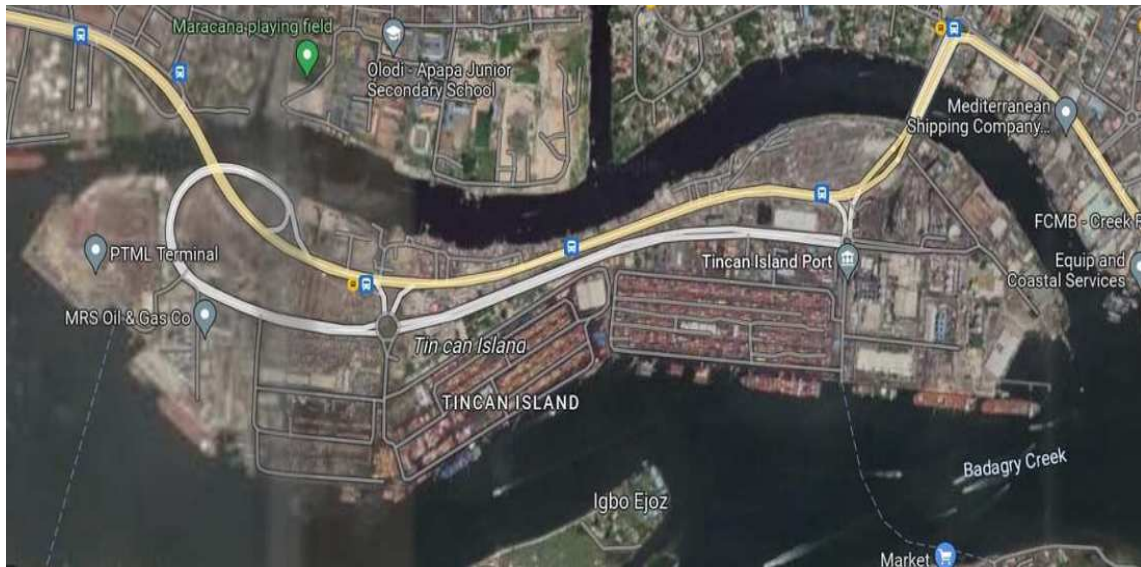


To improve the operational efficiency of the port, the Federal Government introduced the landlord port model, which led to the concession of the terminals to private operators in 2006. Currently, the Lagos Port Complex has five private terminals managed by experts with both local and international experience in port operations. These terminal operators include AP Moller Terminal Ltd. (APMT), ENL Consortium Ltd. (ENL), Apapa Bulk Terminal Ltd. (ABTL), Greenview Development Nigeria Ltd. (GNDL), and Lilypond Inland Container Terminal.

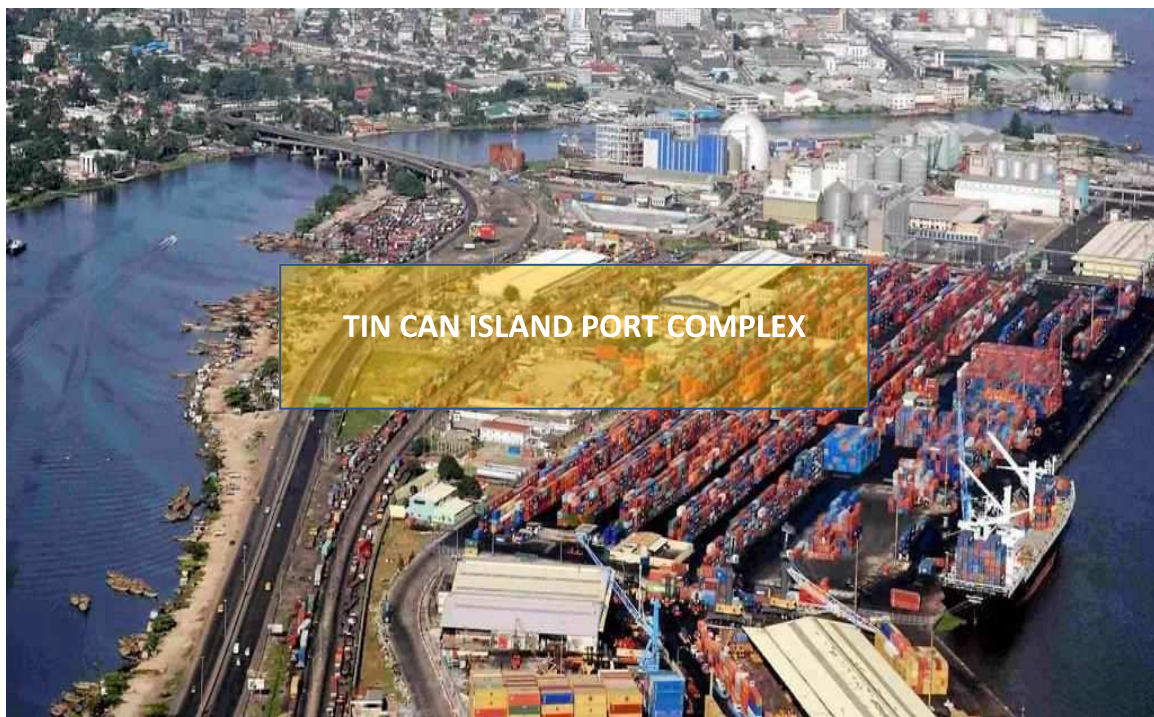
The port additionally features two logistics bases, namely Eko Support Services Ltd. and Lagos Deep Offshore Logistics (LADOL), as well as eight jetties. Sugar, salt, and flour are produced in factories owned by operators within the port premises. The Lagos Port Complex is registered as an ISPS-certified facility with the International Maritime Organization (IMO). The port operates 24 hours a day and has an impressive vessel turnaround time.

Tin Can Island Port Complex, Apapa

Tin Can Island Port is also located in Lagos and has a bearing of **latitude 62°N longitude 30° 23E**. It was established in 1975 when the country was experiencing an increase in economic activities during the oil boom coupled with the post-civil war reconstruction. This led to a high volume of imports and exports that resulted in severe port congestion. The port was constructed to address the congestion problem.



A map of Tin Can Island Port Complex, Apapa, Lagos.



Private terminal operators took over the port in 2006 as part of the government's port concession programme. Operationally, there have been marked improvements in turnaround time and berth occupancy. Average Berth Occupancy rate has improved to 83% as of 2022.

Rivers Port, Port Harcourt

The port is situated in River State, south-east Nigeria. It evolved from one berth for coal exportation to a port with a quay length of 1,259, capable of accommodating eight modern sea-going vessels loading and discharging at the same time. The port is also equipped with 16 tanks with a 3,048-ton capacity for bulk oil installation. This has a conveyor belt and a pier holding the structure, while there are also seven stacking areas of 27,407.15 square meters and four (4) Arcon sheds with a storage capacity of 12,486.15 square meters.



It is a multi-purpose port and plays the 'Mother Port' role to several surrounding jetties through the provision of pilotage and towage services, and catering to the various markets relating to dry, liquid and general cargo trades. It is worthy to note that the port is situated strategically in one of the world's largest crude oil production regions. Like other ports in the country, Rivers Port was also concessioned to private operators during the government port concession exercise.



A section of Rivers Port, Port Harcourt, Rivers State

Onne Port Complex, Onne

Onne Port is also located in River State along the Bonny River Estuary, covering an area of 2,538.115 hectares. It is the first port of its kind in Nigeria to operate the landlord port model with the aim of encouraging private sector participation in the port industry.



The port is one of the largest Oil and Gas Free Zones in the world, providing logistics support to the oil and gas industry in Nigeria both onshore and offshore. It also provides easy access to the entire West African and Sub-Saharan oil fields.

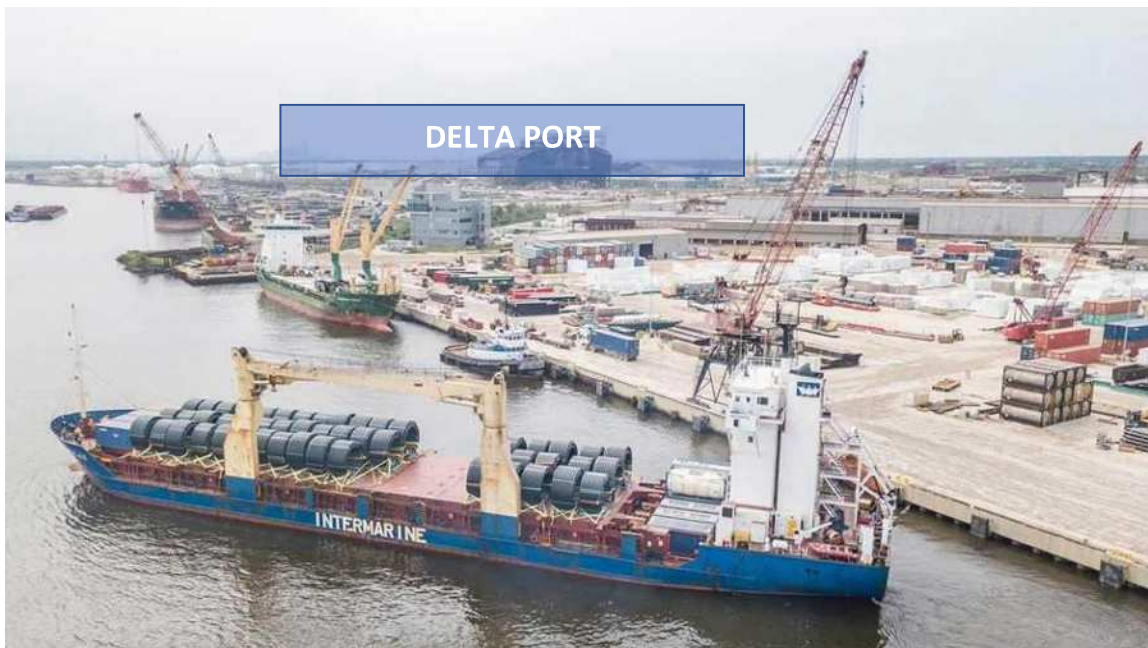


The port accounts for over 65% of the export cargo through Nigerian seaports. In addition to oil and gas operations, other port operations are also carried out in the port such as general cargoes, bulk cargoes (dry & wet), containerized cargoes, and other logistics services.

Delta Port, Warri

Delta Port is located in Warri, Delta State, in south-south Nigeria. It handles mixed cargo and some oil and gas operations. The port is operated by a number of private operators jointly with the Nigerian Ports Authority, and it has a shorter distance for the haulages of cargoes to states within the Delta catchment areas.

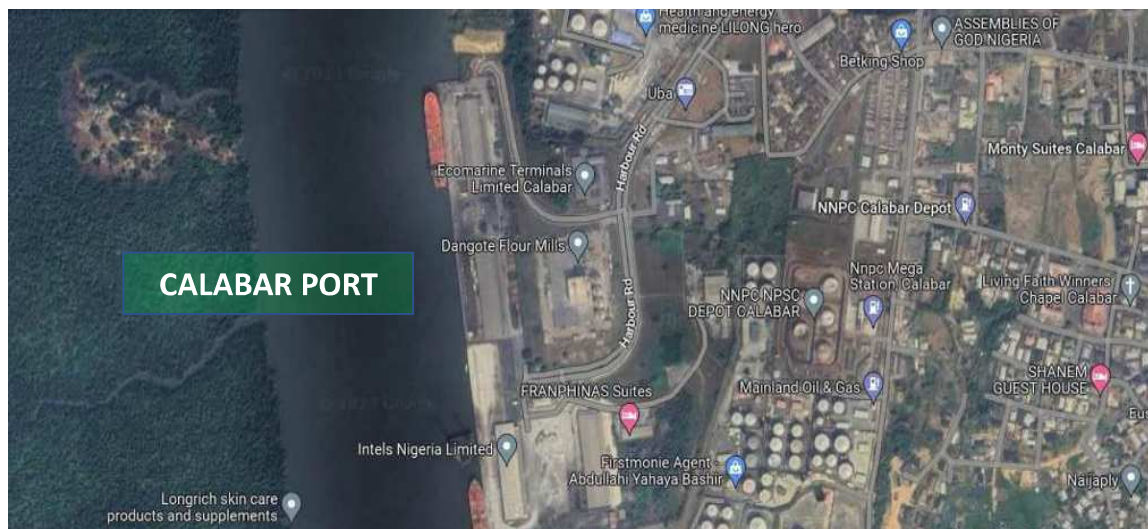
The port has a huge berthing capacity with many jetties, oil tank farms, and multiple companies taking advantage of proximity to the port. As part of efforts towards its growth and development, the port is establishing EGTL facilities for gas exportation which is about to commence production soon.



Calabar Port Complex, Calabar

The port is located in Cross River State. It has a total area of 400,000 square meters and a quay length of 270 meters, making it capable of accommodating vessels with a maximum draft of 7.5 meters. The port has four berths with a total capacity of 11,000 DWT and can handle up to 350,000 metric tonnes of cargo per year.

The port also boasts modern facilities and equipment, including a container terminal with a capacity of 6,000 TEUs and a dedicated oil and gas terminal. In addition, the port has a bonded terminal, a transit shed, and a truck park to facilitate efficient cargo handling and storage.



In terms of cargo, Calabar Port is primarily an export-oriented port, with most of its cargo consisting of cocoa, palm oil, rubber, timber, and other agricultural products. The port also handles imports of raw materials, consumer goods, and machinery.



Another notable feature of Calabar Port is its strategic location, which provides easy access to neighboring countries such as Cameroon, Chad, and Niger. This has made the port a popular choice for traders and shippers in the region, contributing to its status as a key player in the West African trade network.

NEW SEAPORT PROJECTS

- ❖ **Lekki Deep Sea Port:** This port is newly constructed by the Lekki Port LFTZ Enterprise and commissioned by the president of Nigeria. It is located in the Lekki Free Trade Zone in Lagos. It has a capacity of 1.5 million TEUs (twenty-foot equivalent units) per year and will be able to accommodate the largest container vessels in the world.
- ❖ **Bonny Island Terminal:** This port is being developed by the Nigerian National Petroleum Corporation (NNPC) and is located on Bonny Island in Rivers State. It is primarily intended to serve the oil and gas industry and will have the capacity to handle very large crude carriers (VLCCs).
- ❖ **Ibom Deep Seaport:** This port is being developed by the Akwa Ibom State Government and is located in the Ibom Industrial City in Akwa Ibom State. It is expected to have a capacity of 2.5 million TEUs per year and will be able to accommodate the largest container vessels in the world.
- ❖ **Badagry Deep Sea Port:** This port is being developed by the Lagos State Government and is located in Badagry, Lagos State. It is expected to have a capacity of 1.5 million TEUs per year and will be able to accommodate the largest container vessels in the world.

Lekki Deep Seaport



Lekki Deep Seaport is a multi-purpose deep seaport located in the Lekki Free Trade Zone in Lagos, Nigeria. It is one of the most modern seaports in West Africa, with a capacity to handle larger vessels and various types of cargo.

Here are some key data about Lekki Deep Seaport:

Location: The port is located in the Lekki Free Trade Zone, which covers approximately 16,500 hectares of land in the eastern part of Lagos State, Nigeria.

Capacity: The Lekki Deep Seaport is designed to have a handling capacity of 1.5 million TEUs (twenty-foot equivalent units) per year, making it one of the largest ports in West Africa. The port is expected to handle a range of cargo, including containers, dry bulk, liquid bulk, and automobiles.

Infrastructure: The port has a 16.5-meter draft, which means it can accommodate larger vessels. It also has four berths, each with a length of 680 meters, as well as a turning basin of 600 meters in diameter.

Economic Impact: The Lekki Deep Seaport is expected to have a significant impact on the Nigerian economy. It is estimated to generate over 170,000 direct and indirect jobs, and it is expected to attract over \$200 billion in foreign direct investment over the next 50 years.

Partnerships: The project is being developed through a public-private partnership (PPP) between the Lagos State Government and the Tolaram Group, which is a Singaporean conglomerate with interests in consumer goods, infrastructure, and real estate.

Timeline: Construction of the Lekki Deep Seaport began in March 2021, and the first phase of the project was completed in 2023. The project is expected to be fully operational by 2024.

In summary, the Lekki Deep Seaport is a major infrastructure project that is expected to have a significant impact on the Nigerian economy. With its large capacity, modern infrastructure, and strategic location, the port is expected to attract significant investment and create jobs for thousands of Nigerians.

CHALLENGES IN THE NIGERIAN MARITIME INDUSTRY

- **Port Congestion:** Some ports are currently grappling with congestion challenges, particularly in busy locations like Lagos. The government has introduced different measures to address this issue. Some of the measures include use of technology, regulations and enforcement, new port infrastructure and others.



- **Lack of modern infrastructure:** Our ports are currently going through infrastructure modernization campaign by both the government and private sector investors.
- **Multiplicity of agencies:** Multiple regulatory agencies carrying out operations in the ports cause delays and conflicting regulations. The government is working to introduce efficiency measures as part of the Ease of Doing Business Policy.
- **Road traffic gridlock:** Lagos roads experience traffic gridlock as a result of its huge population and the high business activities of the city. Effort is currently being intensified into improving traffic management in the city.
- **Poor road network:** Intercity cargo transportation is hindered in some parts of the country due to poor road network. The government is currently investing in new interstate roads, bridges and flyovers to ease movement of cargo from the ports to other parts of the country and also to neighboring countries.
- **Inadequate railway system:** The ports have very few rail lines for cargo transportation out of the ports, taking advantage of intermodal transport. Existing rail systems are few and old. There are a number of Public Private Partnerships to invest in rail system all around the country.



- **Port security challenges:** Security remains a constant challenge in our ports other maritime sectors. These issues are tackled with different measures as they occur.
- **Under-utilization of eastern ports:** Due to their distance and cost of logistics, cargo owners prefer to use western ports more than eastern ports. The government has introduced a number of incentives and waivers to encourage importers/exporters to patronize eastern ports.

OCEAN AND COASTAL AREAS

Nigeria's ocean and coastal areas are rich in natural resources, biodiversity, and cultural heritage. The country's coastline is approximately 853 kilometers long, stretching from Badagry in the west to Calabar in the east, which is part of the Gulf of Guinea. The Gulf of Guinea is a major hub for international shipping, oil production, and fishing in the region. The countries that share the coastline with Nigeria and the Gulf of Guinea include Benin, Togo, Ghana, Cote d'Ivoire, Liberia, Sierra Leone, and Equatorial Guinea.

Nigeria's coastal zone is characterized by sandy beaches, mangrove swamps, lagoons, and estuaries. The offshore areas include continental shelf and slope, canyons, and seamounts.

Nigeria's maritime zones from the internal and territorial waters, contiguous and exclusive economic zones (EEZ) are critical to the country's economy, as they support a diverse array of marine species that are essential for food security, livelihoods, and economic development. The fisheries sector, which is dependent

A map of West Africa showing the Gulf of Guinea and the Atlantic Ocean. The countries of Nigeria, Cameroon, Gabon, Democratic Republic of the Congo, and Angola are labeled. The Gulf of Guinea is highlighted in yellow, and the Atlantic Ocean is shown in blue. The map also shows the borders of these countries and the location of the Gulf of Guinea relative to the Atlantic Ocean.



The oil and gas industry is another significant contributor to Nigeria's economy, with the majority of the country's oil production occurring offshore. However, oil

spills from oil exploration and production activities have led to significant environmental degradation, affecting the marine ecosystem and the livelihoods of coastal communities. In 2020, there were over 1,300 oil spills in the Niger Delta, which is the main oil-producing region in Nigeria. These numbers have reduced in recent years as a result of different intervention programmes of the government.



Oil and gas facility in the Niger Delta

Coastal erosion is another significant challenge facing Nigeria's ocean and coastal areas. It is estimated that Nigeria loses about 1.5 meters of its coastline each year due to erosion, resulting in the loss of homes, infrastructure, and livelihoods for coastal communities. Climate change is also a significant threat to Nigeria's ocean and coastal areas, as it can lead to sea level rise, ocean acidification, and changes in marine ecosystems.



Coastal erosion along the coast of Bayelsa state, Nigeria



Coastal defense infrastructure by Lagos state government

To address these challenges and promote sustainable development of Nigeria's ocean and coastal areas, the government and other stakeholders have developed policies and initiatives to improve the management of marine resources, protect marine ecosystems, and promote sustainable livelihoods for coastal communities. These efforts include the establishment of marine protected areas, sustainable fisheries management, and coastal zone management programs. However, more needs to be done to ensure the sustainable use and conservation of Nigeria's ocean and coastal areas.

Water Bodies and Marine Ecosystems in Nigeria

Nigeria's marine ecosystems are diverse and vital to the country's economy, food security, and cultural heritage. These ecosystems include coastal mangroves, estuaries, seagrass beds, coral reefs, and open ocean habitats. They support a rich biodiversity of marine species, many of which are important for fisheries and aquaculture. Nigeria's marine and aquatic ecosystems also provide other ecosystem services such as coastal protection, carbon sequestration, and recreation. However, these ecosystems are facing significant threats from human activities such as pollution, overfishing, coastal development and global warming. Effective management and conservation of these ecosystems are critical to ensure their sustainability and the continued provision of ecosystem services to present and future generations. Below is a list of some marine ecosystems in Nigeria.

- Rivers
- Lakes
- Lagoons
- Deltas
- Estuaries
- Seagrass
- Coral reefs
- Saltwater marsh
- Mangroves
- Sandy shores (beaches)
- Open ocean

Anthropogenic and Commercial Activities in Nigerian Ocean and Coastal Areas

The coastal and ocean areas of Nigeria support a variety of commercial activities, including fishing, aquaculture, shipping, oil and gas exploration and production, and tourism. The fishing industry is a significant contributor to the economy, providing direct employment to over 6 million people and contributing about 4.5% to the country's GDP. Aquaculture is also growing in importance, with several species of fish and shellfish being farmed along the coast. The country's coastal and ocean areas are also used for shipping, with the major ports located in Lagos, Port Harcourt, and Calabar. The oil and gas industry is another significant commercial activity, with most of the country's oil production occurring offshore. Finally, tourism is an emerging industry, with several beach resorts and cultural attractions located along the coast. Here is a list of key commercial activities in Nigeria's ocean and coasts:

- ☐ Shipping and ports
- ☐ Oil and gas
- ☐ Fisheries
- ☐ Tourism
- ☐ Wetland agriculture
- ☐ Dredging and sand mining
- ☐ Aquaculture
- ☐ Land reclamation
- ☐ Waste management
- ☐ Power generation

Challenges in the Ocean and Coastal Resources Development in Nigeria

The ocean and coastal development in Nigeria face several challenges that threaten the sustainability of these ecosystems and the benefits they provide. One of the primary challenges is pollution, with land-based sources of pollution and oil spills from offshore oil and gas activities causing significant damage to marine and coastal ecosystems. Overfishing is also a major issue, with many fish stocks already depleted or overexploited. Coastal erosion, resulting from poor land use practices and climate change, is another challenge that affects coastal development in Nigeria. Other challenges include habitat destruction, inappropriate coastal development, and the lack of integrated coastal zone management strategies. Addressing these challenges requires collaborative efforts from government, civil

society, and the private sector, including the adoption of sustainable development practices and the implementation of effective coastal zone management policies. Some of these measures are already being implemented by the government. Some challenges are here listed:

- Marine pollution and environmental issues
- Lack of significant Marine Protected Areas
- Lack of scientific data
- Lack of modern technological solutions
- Inadequate Marine Spatial Planning
- Slow implementation of Blue Economy
- Foreign invasive species
- Policy implementation challenges
- Government bureaucratic bottlenecks
- Security and social challenges



OCEAN AND MARITIME ORGANIZATIONAL CHART IN NIG

The administrative structure through which the Nigerian maritime industry and ocean management is managed starts from the presidency to the ministries, departments and agencies of government (MDAs), also includes private sector players. This can be categorized thus:

1. Approving authorities
2. Regulatory agencies
3. Industry Value System Providers

Approving Authorities

➤ The Presidency

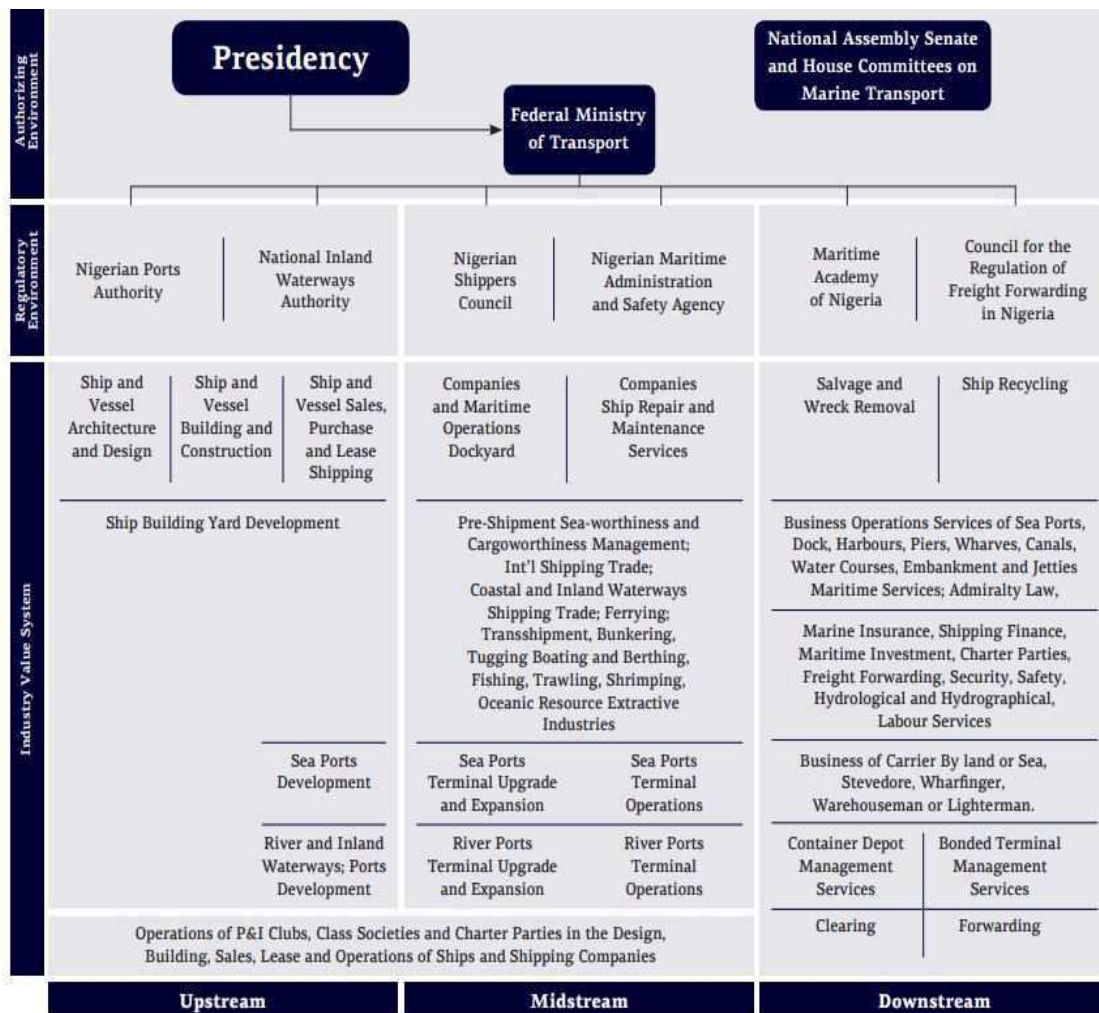
Appoints heads of agencies and ministries, approves their budgets and gives policy direction.

➤ The National Assembly

Makes laws, confirms appointments by the presidency and carries out oversight functions in the sector.

➤ The Federal Ministries

Implements presidential directives, oversees the activities of all maritime regulatory agencies.



Government Ministries Related To The Maritime Sector

- ❑ **Federal Ministry of Transportation:** *This is the lead ministry, policy formulation and planning at national level of basic marine infrastructure, Legislation and International relations.*
- ❑ **Federal Ministry of Environment:** *Administers Nigerian land, air and water environments.*
- ❑ **Federal Ministry of Agriculture and Rural Development:** *The lead administrative ministry for fisheries in Nigeria.*
- ❑ **Federal Ministry of Water Resources:** *Administers water supply, aquaculture and irrigation.*

Regulatory Agencies

- ❖ **Nigerian Maritime and Safety Administration Agency:** *Regulates all other agencies in the maritime sector.*
- ❖ **Nigerian Ports Authority:** *Provides port services and regulates activities of all port stakeholders in Nigeria.*
- ❖ **Nigerian Inland Waterways:** *Manages Nigerian inland waters and regulates activities of businesses and operators.*
- ❖ **Nigerian Shippers Council:** *Oversees the activities of importers and exporters, regulates rates, tariffs and cost of other economic services in Nigerian ports.*
- ❖ **Maritime Academy of Nigeria:** *Education, training and certification of shipboard officers, ratings, and shore-based management personnel.*
- ❖ **Council For The Regulation of Freight Forwarding in Nigeria:** *Regulates and controls the freight forwarding practice in Nigeria.*

Industry Value System Providers (Lagos Port and Tin Can Port)

No.	Types of Companies	Number of Companies		Description of Activities
		LPC	TCIPC	
1	Terminal operators	7	5	Loading/unloading of cargo on ships (wheat, clinker, container, oil, chemicals, and general cargoes) and storage.
2	Logistics bases	2	-	Warehousing, fabrication & assembly, helicopter base, sewage and 6waste water treatment.
3	Jetties	15	30	Local transshipment of different types of cargo
4	Oil tank farms	4	2	Storage and transportation of petroleum products
5	Pilotage	1	1	Navigation of visiting ships through the port channel for berthing
6	Towage	1	1	Towing of ships using tugboats within the harbor
7	Berthing and Mooring	1	1	Berthing and securing of ships at the quays in the port
8	Cargo handling	4	4	Movement of cargo from ships to storage facilities and trucks for removal from the port by stevedores
9	Channel management	1	1	Dredging, wreck removal, provision of navigational aids, monitoring of siltation.
10	Bunkering	5	5	Supply of fuel to ship tanks by bunkering facilities in the port
11	Salvage and rescue	3	3	Emergency response in the port or navigational area in the event of an accident, oil spill or fire incident.
12	Mid-stream operations	3	3	Loading and unloading of cargo midstream from ship to ship or barges or rigs
13	Anchorage	1	1	When ship anchors at the port while waiting to berth
14	Waste management	2	2	Collection, recycling, and disposal of ship waste by port reception facility
15	Ballast water management	1	1	Onshore ballast water treatment services
16	Liquefied Natural Gas operations	1	1	Berthing and discharge of liquefies natural gas
17	Handling of hazardous cargo	3	3	Accompanying of hazardous cargo from ships to destination
18	Construction projects	2	2	Construction of port infrastructure and expansion of existing
19	Fumigation and pest control	1	1	Sanitation of port using chemicals to control pests and germs
20	Sand winning/filling	1	1	Extraction of port sand or filling of port land with sand
21	Pipe laying	1	1	Laying of pipes on port land or in water
22	Onshore/offshore Drilling	1	1	Drilling operations for construction, exploration of resources or for other purposes in the port
23	Factory	-	5	Production of Flour and cement in the port.
24	Warehousing	5	6	Warehouses for storage of different categories of cargoes
25	Container stacking area	12	11	Storage of containers in outdoor stacking areas using cranes
26	Silo storage	-	2	Silos for storage of what, chemicals and other products
27	Offices, workshops & stores	7	10	Offices and shops for the personnel of companies in the port
28	Fishery operations	-	2	Fish cold storage and maintenance of fishing equipment.

OTHER MARITIME RELATED AGENCIES NOT DIRECTLY PART OF THE MARITIME ADMINISTRATIVE FRAMEWORK IN NIGERIA

- Department of Petroleum Resources (DPR)
- Manufacturers Association of Nigeria (MAN)
- Nigerian Customs Service (NCS)

- Nigerian National Petroleum Corporation (NNPC)
- National Oil Spill Detection and Response Agency (NOSDRA)
- Nigerian Hydrological Services Agency (NIHSA)
- Standard Organization of Nigeria (SON)
- National Agency for Food and Drug Administration and Control (NAFDAC)

OCEAN MANAGEMENT

- Ocean management in Nigeria is under the purview of the Nigerian institute for Oceanography and Marine Research (NIOMR). The agency reports to the Federal Ministry of Agriculture and Rural Development
- The agency's ocean research aspects covers aquaculture, biotechnology, fisheries resources, fish technology and product research, biological oceanography and other aspects.

CONCLUSION

In conclusion, the Nigerian maritime and ocean sector, including the country's seaports, plays a crucial role in the nation's economy, providing opportunities for trade, employment, and economic growth. However, this sector also faces significant challenges such as pollution, overfishing, coastal erosion, and port inefficiencies. Addressing these issues requires a collaborative effort from the government, civil society, and private sector to promote the sustainable use of Nigeria's ocean and coastal resources and improve the efficiency and competitiveness of its seaports. With the implementation of effective coastal zone management policies and investments in port infrastructure, Nigeria's maritime and ocean sector can continue to contribute to the country's economic development while protecting the health and productivity of these valuable ecosystems.