
An Assessment Of The Conditions Of Jetties And Its Impact On Maritime Transport In Rivers State.

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Abstract

An assessment of the conditions of jetties and its impact on maritime transportation in Rivers State involves a critical investigation into the physical conditions of the existing jetties operational in the state, the conditions of the boats, safety plan and equipment, emergency rescue and general security plan covering the seafarers, passengers, goods and infrastructures within the jetties. This paper x-rays the conditions of the various jetties serving the riverine communities of the state, the conditions of the channels and the government authorities responsible for the operation and maintenance of jetties and accompanying infrastructures. It assesses the policies guiding jetty operations and the requirements to acquire, develop, construct and operate jetties in Nigeria. It also examines the security challenges facing the jetties and proffers measures to improve on jetty operations and maritime transport in Rivers State.

Keywords: jetty, harbours, maritime, waterways transport and safety.

Introduction

The movement of passengers, goods and services from upland to riverine communities in Rivers State cannot be sustainable, safe and efficient without a functional, structurally tested and safe maritime terminals known as Jetties. According to the Kingdom of Bahrain Port and Jetty regulations of 27th June 2010, A Jetty is any berthing place or landing place, stage, platform, or similar structure, whether fixed or floating, erected or placed, wholly or in Part in or over any waters including any ramp/slipway used for landing or launching a vessel. The jetties in the riverine communities in Rivers State are the gateway to these communities since they can only be accessed through water. In the ancient times, every family in the riverine communities belongs to one “war canoe house” or the other and these houses serve as the channel for fishing and trading (L. T. Jaja 2005). Each family or war canoe House, has a water front where they anchor/ tie their fishing, festive and war canoes to mounted sticks or timbers.

The water fronts were used for trading, smoking of fishes and receiving of visitors to the family. The prominent among these family water fronts develops into the jetties we see today especially the waterfronts used for the kings business like the Opobo Town Jetty close to king Jaja’s Palace, later becomes the main Jetties of the community. The development, management and operations of these jetties require communal, corporate and governmental effort. The various jetties operational in the state gradually became nodes or growth poles for trading and settlement of indigenous people of Rivers State. The trading activities around the Jetties brought about certain markets for the sales of fishes and agricultural products like Kaa market in Khana Local Government Area, Mbiama market in Ahoada west, Nembe water side market and creek Road market in Port Harcourt City Local Government Area of Rivers State etc. These jetties becomes commercial Jetties when the natives engaged in the use of wooden boats (Hand paddling) in transporting people across the rivers to nearby communities like from Abonema jetty in Port Harcourt to KE and Bakana, from Abuloma to Kalio, from marine base to Kalio and Ogoloma, from Kaa to Ataba, from Kono to Opobo etc.

The risk and delay associated with the hand paddling canoes led to the use of wooden boats with outboard engines, cottonou boats with outboard engines for the transportation of large quality of goods and the use of ferries and speed boats for fast, safe and efficient navigation across creeks and rivers. The different riverine local government and communities have specific jetties that serve their communities for instances, before the creation of Bayelsa State and the construction of Mbiama-Egbogene road, people from Yenagoa and surrounding towns were using Mbiana Jetty to get to Okarki, Nembe and Brass people in Port Harcourt were using Nembe/Bonny jetty in Port Harcourt, people heading to Abonnema uses Abonnema Wharf Jetty, Buguma-Iwofe jetty, Opobo-Kono jetty, Andoni-kaa, Bonny-Bodo in Gokana and Bonny jetty in Port Harcourt etc. are the main points of entrance. The abandonment of some jetties by the government and the abundance of illegal activities within these jetties promoted the need for this research. This paper presents an assessment into the conditions of local jetties in Rivers State and its impact on maritime transport within the riverine communities of the State.

Problem statement

Several communities in the Southern Part of Rivers State can only be accessed through the use of boats and the services of these boats require standard and secured jetties but except the NLG private jetties in Port Harcourt base and Bonny Island, majority of the commercial jetties are in poor conditions.



Plate 1: ATC jetty Okrika – a commercial jetty Source: Author's work (2021)

For stance, the Marine Base Jetty used in accessing Okrika and other riverine communities is in degraded and very poor condition. The waterway and shore linking the jetty is filled with debris such that the jetty is not put into proper use during low tide. The access road linking the jetty is not directly connected to the elevated platform and in complete degradable condition.



Plate 2: Marine Base Jetty in Port Harcourt. Source: Author's work (2021)

The jetty is not protected by rails, it has no slip way, terminal building, security operation and safety plan. It has no readily rescue and emergency plan and personnel like divers, ambulance and emergency medical response team. The route is fested with wrecks, derelicts and other obstructions; the routes and banks have no lights, boughs and navigational aids, which is the major cause of no night operations. The above stated situations are feasible in almost all the commercial jetties in Rivers state except the ATC jetty Okrika and the newly reconstructed Nembe-Bonny jetty in Port Harcourt. All of these jetties are taken over by local mafia groups and illegal bunkering activities. Instead of these jetties becoming points of recreation, transport and legal trading, they are now depots for storing fuel by illegal bunkers, joints for sale and smoking of marijuana, meeting point for cult groups and existing money banks for security agents. The illegal activities taking place on these jetties is the major reason for low patronage while the incessant activities of sea pirates is the grave cause for loss of life and properties in transit.



Plate 3: Illegal Bunkering Sites on Bonny Jetty in Bonny LGA.

The failure of government agencies responsible for the management, safety and operations of jetties; maintenance, dredging, security, removal of wrecks and general monitoring of inland waterways is the bedrock for the degradable conditions of our jetties and inland waterways in Rivers State and it is on this premise, this research is predicated.

Goals and objectives

The aim of this research is to assess the conditions of local jetties and its impacts on maritime transport in Rivers State. The objectives of this work are:

- i. To assess the physical conditions of selected jetties in Rivers State
- ii. Conduct an investigation into the existing safety and security plans operational in these jetties
- iii. Investigate the major causes of low patronage of transport services and fear among commuters around the jetties and water ways.
- iv. To assess the effectiveness of government agencies responsible for the licensing, control, monitoring and safety of jetties and inland waterways in Rivers State.
- v. Make effective, functional and sustainable recommendations for the revitalization of these jetties and inland water transport in Rivers State.

The concept of Harbour

A jetty is the concrete part of a harbour. The word jetty and harbour are mostly used interchangeably. According to Gupta 2009, a harbour is the sheltered area of the sea in which vessels could be launched, built or repaired, or could seek refuge during storm time and provide loading and unloading facilities of cargo and passengers. According to oxford advanced learners dictionary, a harbour is an area of water on the coast, protected from the open sea by strong walls, where ships can shelter: A harbour is a protected area of the sea or river designed for loading and offloading of cargos and passengers, harboring of ships and boats in time of storms, building, repairing and launching of ships. Due to the improvement in navigation methods, the vessels have increased in size, number and importance. This improvement has also increased the necessity of providing suitable and spacious accommodation to vessels to take shelter in hour of need and discharge passengers and cargo under protected conditions. A jetty is a component of artificial harbor: these manmade shelters are known as artificial harbours. In other words, an artificial harbour is an area protected from the effect of waves, either by break waters or dredging. The different components of the harbour are wharf, quay, break water, pier, jetty etc.

Functional classification of Harbours

Depending upon the utility and situation, harbours may be divided into four groups:

- a. Harbour of refuge including naval bases.
- b. Commercial harbours, connected with ports.
- c. Fishery harbours and
- d. Military harbour

Requirements for Harbour of refuge

The following are the main requirements for a harbour of refuge:

- a. Facilities of obtaining repairs and supplies.
- b. Safe and convenient anchorage against the sea.
- c. Ready accessibility from the high seas. (Gupta 2005).

Harbour of refuge can serve as refuge points to naval ships during emergency, anchorage to commercial and passenger boats during storm and also points for quick repairs of boats and ships. Harbour of refuge could be located in Oyorokortor area of Andoni Local Government in Rivers State.

Requirement for a commercial Harbour

Some basic requirement considered in the construction of a standard commercial harbour are:

- a. Storage sheds for cargo.
- b. To avoid delay, good and quick repair facilities.
- c. Ample quay space i.e. ample space for unloading and loading cargo and facilities for transporting, loading and unloading cargo.
- d. Spacious accommodation for the mercantile marine.
- e. Good and sufficient sheltered conditions as loading and unloading are done with advantage in calmer waters. Commercial harbours in Rivers State are the Konor Water side jetty, Marine base jetty, Bonny water side jetty, Okrika main jetty, Iwofe water front jetty, Bodo jetty, Abuloma jetty, Opobo main jetty, Abonnema Wharf jetty, Bakana jetty, etc. Commercial harbour could be located on coast of big rivers or even on inland rivers coasts.

Requirement of a fishing Harbour

The following requirements are needed:

- a. The harbour should be constantly open for arrival and departure of fishing ships.
- b. Loading and unloading facilities along with quick dispatch facilities for the perishable fish catch, such as railway sidings and roads should be there.
- c. Refrigerated stores with sufficient storing space for preserving fish. Some jetties in Rivers State such as the Kaa water side, Bonny main jetty, Opobo main jetty, Oyorokortor water side, Marine base and Bodo jetty can efficiently serve as fishing harbours if it is well reorganized and upgraded to standard.

Government agencies responsible for jetties and waterways

1. National Maritime Administration And Safety Agency (NIMASA)

NIMASA was established through the enactment of the NIMASA Act (2007). The Nigerian Maritime Administration and Safety Agency is the apex regulatory and promotional maritime agency. The agency was created from the merger of National Maritime Authority and Joint Maritime Labour Industrial Council (former parastatals of the federal ministry of transport) on the 1st August 2006.

Reasons for the establishment of NIMASA

The Agency was established primarily for the following:

- a. Administration of maritime safety, seafarers' standards and security
- b. Maritime labour and shipping regulation
- c. Promotion of commercial shipping and sabotage activities. Pollution prevention and control in the marine environment.
- d. The agency also implements domesticated international Maritime organization (IMO) and international labour organization (ILO) conventions

Core functions of NIMASA

According to part IV article 22 and section I of the NIMASA Act of (2007)

The functions and duties of the agency shall be to:

- a. Pursue the development of shipping and regulatory matters relation to merchant shipping and seafarers
- b. Administering the registration and licensing of ships
- c. Regulate and administer the certification of seafarers
- d. Establishment of maritime training and safety standards
- e. Regulate the safety of shipping as regards the construction of ships and navigation
- f. Provide search and rescue service;
- g. Provide directions and ensure compliance with vessel security measurement
- h. Carry out air and coastal surveillance;
- i. Control and prevent marine pollution;
- j. Provide direction on qualification, certification, employment and welfare of maritime labour
- k. Develop and implement prodigies and programs which will facilitate the growth of local capacity in ownership, manning and construction of ships and other maritime infrastructure
- l. Receive and remove wrecks.
- m. Establish the procedure for the implementation of conventions of the international maritime organization (IMO) and the international labour organization (ILO) and other international conventions to which the federal republic of Nigeria is a party on maritime safety and security, maritime labour, commercial shipping, and for the implementation of codes, resolutions and circulars arising there from.

According to sub section 3 of section 222, part iv of the NIMASA Act 2007, the agency has the power to form partnership or cooperation with individuals, corporate organization, federal or state government to foster maritime trade in Nigeria.

National Inland Waterways Authority (NIWA) Decree of 1997

Objectives of the Authority, according to Part 1, Section 7 of NIWA Act (1997) states that the objectives of the authority shall be to:

- a) Improve and develop inland waterways for navigation;
- b) Provide an alternative mode of transportation for the evacuation of economic goods and persons; and
- c) Execute the objectives of the national transport policy as they concern inland waterways.

Part II 8. It shall be the function of the authority to:

- a) Provide regulations for inland navigation;
- b) Ensure the development of infrastructural facilities for a national inland waterways network connecting the creeks and the rivers with the economic centres using the river-ports as nodal points for intermodal exchange; and

- c) Ensure the development of indigenous technical and managerial skill to meet the challenges of modern inland waterways transportation.
- Other functions and powers of the authority shall be to:
- a) Undertake capital and maintenance dredging;
 - b) Undertake hydrological and hydrographic surveys;
 - c) Design ferry routes
 - d) Survey, remove, and receive derelicts, wrecks and other obstruction from inland waterways;
 - e) Operate ferry services within the inland waterways system;
 - f) Undertake installation and maintenance of lights, buoys and all navigation aids along water channels and banks.
 - g) Issue and control licenses for inland navigation, piers, jetties, dockyards;
 - h) Examine and survey water craft and ship yard operators
 - i) Grant permit and licenses for sand dredging, pipeline, constructive dredging of slots, crossing of waterways by utility lines, water intake, rock blasting and removal;
 - j) Grant licenses to private inland waterway operators;
 - k) Approve designs and construction of inland river crafts;
 - l) Approve and control all;
 - i. Jetties, dockyards, piers within the inland waterways,
 - ii. Advertising within the right-of-way of the waterways;
 - m) Reclaim land within the right of way;
 - n) Undertake the construction, administration and maintenance of inland river-ports and jetties;
 - o) Provide hydraulic structures for river and dams, bed and bank stabilization, barrages, groynes;
 - p) Collect river tolls;
 - q) Undertake the production, publication and broadcasting of navigational publications, notices, hydrological year book, river charts and river maps;
 - r) Carry out consultancy and contractual services;
 - s) Represent the government of Nigeria at national and International Commissions that deal with navigation and Inland water transportation.
 - t) Subject to the provisions of the EIA Decree 1992, Carryout environmental impact assessment of navigation and other dredging activities within the inland water and its right-of ways;

Declaration of navigable waterways, ETC

- ❖ The rivers and their tributaries, distributaries, creeks, lakes, lagoons and intra-coastal-waterways specified in the second schedule to this Decree are hereby declared federal navigable waterways.
- ❖ All navigable waterways, Inland waterways, river ports and internal waters of Nigeria, excluding all direct approaches to the Port listed in the third schedule to this decree and other waters declared to be approaches to ports under or pursuant to the Nigerian Ports Decree 1993, up to 250 metres beyond the upstream edge of the quay of such ports shall be under the exclusive management, direction and control of the authority.
- ❖ Subject to the provisions of the lands (title vesting, etc) Decree 1993, the right of land usage for improvement of navigability and provision of infrastructure shall cover areas on both banks of the waterways which would be submerged in a flood of 100years return period.
- ❖ In case of waterways with steep banks where such flood have no overbank flow, the right of way shall include the areas of land along the waterway measured 100metres perpendicular from the edge of the channel.
- ❖ No person including a state shall;
 - a. Obstruct a declared waterway, take sand, clay or stone from any declared waterway; or

- b. Erect permanent structures within the right-of-way or divert waters from a declared waterway;
- c. Carry out any of the activities as specified in section 9 of this Decree, without the written consent, approval or permission of the Authority.

Procedures to construct, erect, own, occupy and operate a jetty

According to the Nigerian Ports Authority Jetty Handbook (2017), the following processes are stipulated to construct Erect, own, occupy and operate a Jetty in Nigeria.

- i. Prospective operators should apply to NPA for permit to construct Jetty.
- ii. The application should be accompanied with relevant documents as follows;
 - a. Every application shall be in prescribed forms in the first schedule of the Port Piers Regulation (Forms 1, J2, 3, 4), addressed to the Authority.
 - b. These must be accompanied with the under listed documents:
Six (6) copies of the following: Architectural Drawings, Structural Drawing/ Details, Structural Design Calculations, Bollards/Dolphins arrangement and Load test, Material Schedule, Geotechnical Investigation.
 - c. Location of the pier in relation to the immediate surrounding land and building if any
 - d. Evidence of title of land
 - e. Evidence of payment of prescribed fees
 - f. Certification of Business incorporation. Only Nigerian registered limited liability companies can be granted Jetty License.
 - g. With foreign shareholders, shareholding ratio of the company should be 60% to 40% (Nigerian to foreign).
 - h. Two (2) copies of Admiralty or NPA chart of the port or approaches where the pier is situated.
 - i. Submission of approved environmental impact assessment (EIA) Report from the Federal Ministry of Environment.
 - j. Facilities: Fencing and railings, mooring facilities, landing steps for boats, life-saving appliances and light on piers, unless exempted at the discretion of the authority.
 - k. Appraisal of the documents by NPA standing committee on private Jetties
 - l. Forwarding of recommendations to management for further action
 - m. Management may forward the recommendations to the presidential standing committee on private jetties for approval to construct.
 - n. On receipt of approval from the presidential standing committee on private Jetties, NPA conveys approval to construct to the operator.
 - o. On completion, NPA standing committee on private Jetties shall inspect the Jetty and make recommendations to management for approval to operate on payment of prescribed fees.

Operations requirements of a jetty

The following documents are required before the operation of any Jetty in Nigeria:

- i. Proof of holding bay inside and outside the Jetty
- ii. Installation of flow meters

Technical requirement of a jetty

The technical requirements for the construction of a Jetty are:

- a. Provision of bathymetric charts for location and approach
- b. Architectural Drawings
- c. Structural Drawings/Details
- d. Structural Design calculation
- e. Bollards/dolphins arrangement and load test
- f. Material Schedule

- g. Geotechnical Investigation
- h. Transportation impact assessment (TIA)
- i. Environmental impact Assessment (EIA)

Safety and security requirements of a jetty

The basic requirements for the safety and security of Jetties are:

- a. Proof of Port Facility Security Assessment (PFSA) and Port Facility Security Plan.
- b. Engagement of a certified port facility security officer (PFSO)
- c. Provision of the following security equipment:
 - High security perimeter fence equivalent to BS1 1722 part 10
 - Access control equipment
 - Closed Circuit Television (CCTV)
 - Modern gate fitted with speed barriers.
 - Proper illumination
- d. Emergency access and exit route
- e. Availability of pollution control equipment and operating personnel
- f. Provision of life saving aids
- g. Provision of hand rails on the deck of the jetty
- h. Provision of fire-fighting equipment
- i. Proof of implementation of approved safety plan
- j. Proof of implementation of approved HSE policy
- k. All vessels berthed must ensure that a safe means of access is provided.
- l. No double banking of vessels would be granted
- m. Master of vessel must ensure that this access remains safe at all times while alongside and to adjust gangway should the situation become unsafe.

Bunkering services requirement

All requests for bunker should be directed to Port Managers. Approvals for bunker should be restricted to office hours only (0800-1700hrs). Bunker suppliers/chandlers shall apply/notify NPA directly and seek approval before commencement of bunkering. Bunkering suppliers shall provide the following information:

- a. Name of Bunker supplier
- b. Name of Bunker Barge (or truck number)
- c. Quality to be supplied
- d. Location of supply
- e. Date and time of supply
- f. f. receiving vessel.

Design codes for jetties

According to the Health and Safety Executive Policy (2015), jetty is defined as “a pier projecting out into the waterway and with facilities for mooring ships at its head or along its flank”. For the majority of jetty installations, there are four main events which individually or jointly have the potential to cause significant harm or damage:

- Fire
- Explosion
- Release of a toxic substance
- Release of a marine pollutant

Common causes of such events are:

- Inadequate design, installation or maintenance of installations and equipment.

- Inadequate management of operations
- Operator error due to lack of training or supervision
- Lack of awareness of the properties of the dangerous substance
- Arson or vandalism

Findings

From the investigation carried out around the jetties and waterways in Rivers State, the following were discovered:

- i. There is a complete negligence of our jetties and waterways by the federal authorities due to the fact that the law only empowers the National Inland Waterways Authority and Nigerian Maritime Administration and safety Agency to handle the affairs of jetties and safety of waterways.
- ii. The excessive presence of illegal bunkering activities within and around our jetties is as a result of collaboration between security agencies and the locals involved in this activity.
- iii. The illegal bunkering activities and uncoordinated disposal of waste around our jetties is the major cause of fire out-break within and around our jetties recently.
- iv. None of these jetties have a functional Health safety and environmental plan, safety and security plan, emergency response and fire-fighting facilities.
- v. The depth of waterways is reduced by debris and domestic waste and high quantity of wrecks. The waterways have no lighting system for safe traveling at night and safety presence or facilities are found along the routes.
- vi. Generally, the existing jetties lack maintenance and need redevelopment. The poor conditions of Bonny jetty at Bonny Island was the major cause of collapse which led to destruction of boats and loss of life.

Recommendations

In the light of the findings above, the following recommendations are made:

1. The existing jetties in Rivers State should be overhauled for maintenance and upgrading.
2. The channels leading to these jetties should be dredged and all wrecks removed by the relevant authorities.
3. All jetties operational in Rivers State should have a functional HSE, security and emergency plan.
4. The waterways should be equipped with life bouys legalizing system and effective security monitoring system.
5. All illegal bunkering activities in and around these jetties should be eliminated to reduce the incidents of fire outbreak.
6. The roads leading to these jetties should be reconstructed with reserved car parks and areas for loading and offloading of trucks.

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