In-Land Water Based Transport in Lagos State: Challenges and Remedies

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ABSTRACT

Transportation is an essential need for humanity, be it land, air or sea based. It should devoid of operational handicaps. However, in Lagos State, In-land water based transportation encounters various kinds of impairments ranging from human induced to natural cause. To this end, this study explores the challenges encountering In-land water based transportation system in Lagos state. Adopting survey research design, both secondary and primary data were employed for the study. Secondary data were sourced from libraries, journals and relevant institutions such as Lagos State Waterways Authority (LASWA) wherein patronage data was gotten, while primary data were gotten through field observations, interview and structured questionnaires. Total of 228 (0.05%) users in three most patronized jetties, one each in a local government were purposively sampled, and administered a set of questionnaires, using accidental sampling technique. The study hypothesized that In-land water based transportation varies significantly between the Local governments areas (P=0.000). However, they encountered similar challenges according to findings. The study revealed that 34.6% of the respondents complained of the presence of water hyacinth. 44.3% of the respondents complained of poor safety measures. 26.8% of the respondents suggested clearing of the water hyacinth. 25.0% of the respondents suggested that the obstacles can be resolved through adequate funding and investment on Inland Waterways Transportation. This study recommends an integrated control method which is biological and mechanical removal of the water hyacinth for easy navigation on the waterways.

Keywords: In-land water, Transportation, Jetty, Water hyacinth, Lagos

INTRODUCTION

Movement is a basic activity of man and it is impossible for man to do without it. Based on this need, and pursuit of development through science and technology, movement of man is aided through transportation. Transportation represents one of the most important human activities worldwide. Transportation is defined according to Oni (2009), as the conveyance of goods and people over land, across water, and through the air from one location to another.

Ighodalo (2009) observed that several modes of transportation exist for both man and goods; and that these modes, can be grouped into four basic categories, namely: rail, road, water and air. Water transport is associated with inland waterways, coastal waters and the deep sea (Ismaila, 2008). Inland waterways are navigable water bodies which include: rivers, lakes, coastal creeks, lagoons and canals, found within the geographical dimensions of a state (Aderemo and Mogaji, 2010). The movement of goods and services along inland waterways is one of the oldest means of transporting goods and services from point to point (Fellinda, 2006). This is largely due to the fact that inland water transport (IWT) offers the most economical, energy efficient and environmental friendly means of transporting all types of cargo from place to place (Ojile, 2006).

The development and efficient functioning of IWT is very essential highly congested cities to cushion the high demand and over stressed other means of transportation such as land. Example is a megacity like Lagos state, which has a high demand on urban transport, especially road mode whereby six million passengers hustle daily between Lagos mainland

and island. In Lagos State over 98% of movement is done by road, and cities of this size cannot survive on one mode of transportation (Frontier Market Intelligence, 2014).

It is unfortunate that Lagos, a coastal city with abundant navigable waterways has its waterways minimally exploited. If optimized, it could help in eliminating congestion, pollution, and provide a low cost alternative to long haul passages. Despite these many rewards, In-water based transportation system encounters a number of challenges which if managed; it will effectively complement and reduce the pressure on road transport in Lagos State. Obed (2013) lamented that there has been a considerable decline in the use of IWT in Nigeria. This was attributed to several physical constraints impending growth and performance in the IWT sector in Nigeria. This creates an urgent need for innovative actions and strategies to radically improve the sector for it to continue as the bedrock in facilitating trade, industrial and economic growth. Therefore, this study examines the challenges militating the effective usage of In-water based transportation system with the view of finding solutions to managing the challenges encountered by this mode of transportation.

Few researches have been done on challenges of waterways in Nigeria. Among the few researches, Ezenwaji (2012) in his study on the constraints on effective water transportation in some riverine communities of old Anambra local government area identified some challenges confronting IWT with the hope that the elimination of such constraints would serve as a catalyst to economic development of such areas. The result of the analysis showed that there are four prominent constraints namely environmental, economic, craft and market.

Environmental constraint is the most important underlying factor militating against effective water transportation. The length of the river covered by water hyacinth seems to pose a great problem as it is difficult for boats to ply where there are large numbers of the water weeds. Rangaraj and Raghuram (2007) emphasized that unless the waterways are cleared of water weeds no meaningful transportation can take place. In Anambra River and its tributaries, water weeds at times cover over 75% of the width of the river for a continuous stretch of upwards of 3kms accounting for the high risk of boat capsizing. The absence of budgetary provision for water transportation over the years is a big constraint to effective water transportation. For a long-time now, Anambra State Government has made no budgetary provision for this sector and as a result no funds have been released to the sector by the government. Absence of markets or attraction between origin and destination of places linked with waterways often times affect the level of patronage of the transport mode. This results in low business profit for the operators. Based on the findings, Ezenwaji (2012) recommended prompt and adequate intervention of State Governments to the mode, through inclusion of the sector in the budget; very low water transportation fares and high cost of boat maintenance should be addressed both by the State government and boat operators through their transport union.

Some other inherent challenges facing the sector noted by UN-ESCAP reviewer (2003) include: Safety - Safety is often compromised because IWT tends to be ignored by existing government transport regulations and environmental safety standards. Certain environmental problems and risks associated with IWT include canalization and dredging (reactivation of polluted sediments into surface waters); shipping operations (pollution through oil spills; noise pollution; risks of accidents with dangerous cargoes); and import of invasive species: (bacteria and other microbes, small invertebrates and the eggs, cysts and larvae of various species) (Gascho *et al.*, 2006).

Study Area

The study area is Lagos state with a particular focus of waterways where water based transportation operates. Lagos State is the smallest state in geographical terms in the Nigerian

Federation, it occupies an area of 357,700 hectares (3,475.1km^2), which is just 0.4% of the total land area of Nigeria (Adejare *et al*., 2011), of which 22% of the total land mass consists of lagoons and creeks. Lagos State lies between longitudes $2^0$42' East and 3^0 42' East and Latitude 6^0 22' North and 6^0 52' North, in the southwestern area of Nigeria and shares boundaries with Ogun State both in the north and east, by the Republic of Benin in the west and the Atlantic Ocean, stretching for almost 180 kilometres of coastline, in the south (Olayiwola *et al*., 2006).

Lagos state is a mega city with an estimated population of about 9 million inhabitants which is about 6.5% of the total population of Nigeria (Census, 2006). However, according to Michael (2012), the city of Lagos is expected to hit the 24.5 million population mark and thus be among the ten most populous cities by the year 2015. Twelve (12) out of the twenty (20) Local Governments of Lagos state are drained by rivers, which are: Badagry, Ojo, Amowo - Odofin, Apapa, Lagos Island, Eti - Osa, Kosofe, Somolu, Lagos Mainland, Ikorodu, Epe and Ibeju Lekki. However, Lagos state is running water transport on 12 routes under the supervision of Lagos State Water Authority (LASWA). The routes are Ikorodu-Marina/CMS; Marina-Mile 2; Ikorodu-Addax/Falomo; Ikorodu-Ebute Ero; Marina-Ijegun Egba-Ebute-Ojo; Mile 2-Marina/CMS-Mekwen-Falomo; Badore-Ijede; Badore-Five Cowries; Marina-Oworonshonki; Ebute Ojo-Ijegun Egba; Oworonshonki-Five Cowries; and Baiyeku-Langbasa. The metropolitan area accounted for the seventeen out of the twenty local government areas in Lagos State as shown in Figure 1.
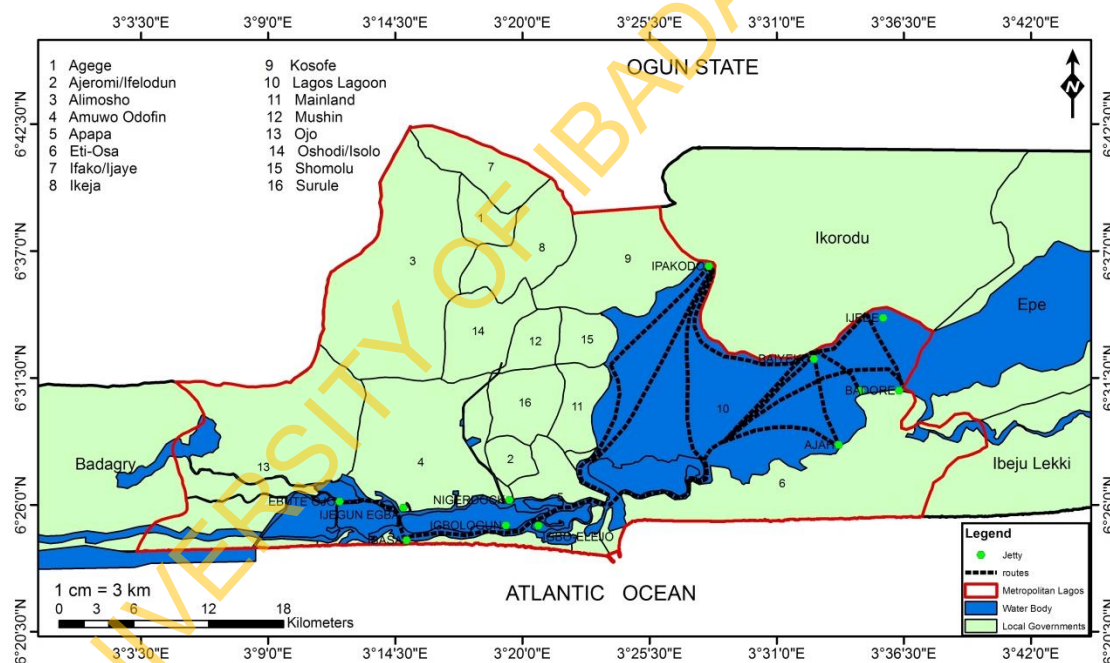

Figure 1: Lagos Inland Waterways Routes
Source: LASWA, 2014 and Author's Work, 2014

METHODOLOGY

This is a non-experimental study, cross-sectional and descriptive in approach. The study employs the use of both secondary and primary data. The secondary data were sourced from libraries, journal publications, internet, institutions and archives. Secondary data consisting of statistics on water transport services, number of users and operators etc. were obtained from Lagos State Waterways Authority (LASWA). Techniques used for primary data collection include structured questionnaires, open ended individual conversation and field observations. Having gotten the patronage data between January to September, 2014 of the various jetty according to their local government of operations from LASWA as shown in Table 1, the

jetty with the highest patronage were purposively sampled, and they are Majidun in Ikorodu Local Government; Liverpool in Island and Ijegun Egba in Badagry/Ojo Local Government as shown in Table 2. A total of 228 questionnaires (0.05%) were administered to Inland water based transportation users using accidental sampling technique. The study hypothesized that Inland Waterways users does not vary significantly between the Local Government Areas; Analysis of variance (ANOVA) was used to test the variation in the number of users in the local government areas. Statistical Package for Social Sciences (SPSS) was used to obtain frequencies for the descriptive statistics.

Table 1: Population of Study

Ikorodu Local Government			Island Local Government			Badagry/Ojo Local Government		
Names of Jetties	Number of passenger from Jan-Sep., 2014	Average Number of passengers from Jan-Sep., 2014	Names of Jetties	Number of passenger from Jan-Sep, 2014	Average Number of passengers from Jan-Sep., 2014	Names of Jetties	Number of passenger from Jan-Sep., 2014	Average Number of passengers from Jan-Sep., 2014
Metro Ferry	644,645	71,627	Coconut	925,722	102,858	Iya Afin	195,120	21,680
Majidun	1,337,128	148,570	Liverpool	1,455,993	161,777	Slave Route	148,046	16,450
Ijora	217,692	24,121	Alex	565,248	62,805	Ebute-Ojo		
Badore	747,798	83,089	Sagbokoji	879,062	97,674	Ijegun Egba	1,317,018	146,335
Langbasa	568,130	63,126	CMS	535,253	59,473	Tin Can	1,223,896	135,988
Oke Ira Nla	470,649	52,294	Takwa Bay	501,191	55,688			
Bayeku	1,274,830	141,648	Falomo	235,655	26,184			
Epe	137,925	15,325	Elegbeta	311218	34,580			
Agboyi Ketu	502,417	55,824	Addax	551,530	61,281			
Ibeshe	48,032	5337						
Total	5,949,246	660,961		5,960,872	662,320		2,884,080	320,453

Source: Lagos State Waterways Authority, 2014

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Table 2: Sample Frame and Sample Size of IWT users for the study

S/N	Local Government/District	Sampled Jetty	Sample Frame	Sample Size (0.05%)
1	Ikorodu	Majidun	148,570	74
2	Island	Liverpool	161,777	81
3	Badagry/Ojo	Ijegun Egba	146,335	73
	Total		**456,682**	**228**

Source: Lagos State Waterways Authority, 2014 and Field Survey, 2014

FINDINGS AND DISCUSSION
Obstacles hindering water transportation

According to Table 3, 5.3% of the respondents responded that the river course is shallow thereby hindering navigation in some part of the waterways. 34.6% of the respondents complained of the presence of water hyacinth. The water hyacinth appears August and remains till February of the following year if not cleared. Water hyacinth has been a threat to operators on waterways because it damages the boat engine propeller. 44.3% of the respondents complained of poor safety measures. The life jacket giving to passengers were of poor quality and sub-standard. 15.8% of the respondents complained of other reasons which are lack of funding and investment from government and private body respectively, poor quality of vehicle, poor maintenance, facilities and waterways transportation management. Plate 1, 2 and 3 shows the presence of water hyacinth on the waterways, poor facility of Liverpool and CMS jetty respectively.

Table 3: Obstacles hindering water transportation

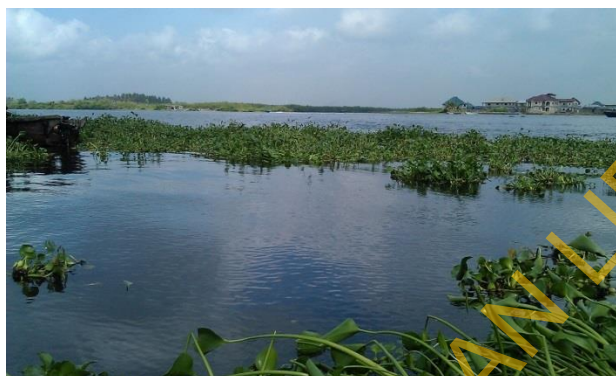| Obstacles hindering use of waterway transportation	Number of respondents	Percentage
Shallow river	12	5.3
Water hyacinth	79	34.6
Poor safety measures	101	44.3
Others (poor quality of vehicle, poor maintenance and waterways transportation management).	36	15.8
Total	**228**	**100.0**

Plate 1: Water hyacinth on the waterways

Plate 2: Poor facility of Jetty (Liverpool) in Lagos Island

Plate 3: Poor facility of Jetty (CMS) in Lagos Island
Source: Author's Work, 2014

Ways of overcoming challenges facing water transportation

Table 4 presents ways of overcoming challenges facing water transportation. In a bid to find a remedy to the obstacles encountered, the users also gave their opinion. 26.8% of the respondents suggested clearing of the water hyacinth. 25.0% of the respondents suggested

that the obstacles can be resolved through adequate funding and investment on Inland Waterways Transportation such as access to business loans and attracting investors to water transportation sector. These funding and investment can also be inform of provision of vehicles and facilities etc. 6.6% of the respondents noted that the operators (captain) lacks competent skills, they therefore suggested it is paramount they go for regular training on inland waterways transportation. 35.5% of the respondents of the also suggested that ensuring stringent safety measure is necessary to curb the poor safety measures practices such as non-compliance to laws governing IWT as directed by LASWA, non-use or misuse of life jackets, refusal to purchase fire extinguisher and life ring for their vehicles etc. 6.1% of the respondents did not give any suggestion.

Table 4: Ways of overcoming water transportation obstacles

Ways of overcoming waterways transportation obstacles	Number of respondents	Percentage
Clearing the water hyacinth	61	26.8
Funding and Investment	57	25.0
Personnel training	15	6.6
Stringent safety regulations	81	35.5
No response	14	6.1
Total	**228**	**100.0**

To test statistically the null hypothesis which stated that Inland waterways users does not vary significantly between the local government areas, Analysis of Variance (ANOVA) was used to compare the variation in the numbers of users between the local government areas in the study area. The result of the analysis presented in Table 5 shows that, there is significant difference between the numbers of users in the study area. The ANOVA is statistically significant at 95% level of confidence at the p value of 0.000. Since the p value is less than 0.05 (P<0.05), the null hypothesis is therefore rejected.

Table 5: ANOVA-Variation in Inland Waterways users between the local governments

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	168875991169.389	1	168875991169.389	550.801	.000[b]
Residual	7665016249.278	25	306600649.971		
Total	176541007418.667	26			

a. Dependent Variable: no of passengers-
b. Predictors: (Constant), local government

CONCLUSION AND RECOMMENDATIONS

This study explored the challenges encountered by In-land water based transportation system in the coastal areas of Lagos state with a view to finding a visible remedy to those challenges. Consequently, the study revealed that water hyacinth is a threat on the water channels. This highly invasive aquatic weed surfaces on the waterways in August till February every year, it blocks the routes by forming a mat on the waterways which makes movement difficult on the waterways. The government should ensure that agency responsible, be it government agency, should respond to this challenge appropriately. This study recommends an integrated control method which is biological and mechanical removal. Mechanical removal of the bulk of material followed by a multiple herbicide treatments of remaining plants can be used to control severe water hyacinth infestations, while minimizing water quality impacts.

Provision of security and safety measures like use of standard life jacket should be provided by the government. Also, the operators lack formal waterways transportation education. Consequently, their lack of formal education in this sector has affected their operations. Therefore, the government or agency responsible for IWT should ensure the operators upgrade their knowledge of IWT by going for workshops, training and obtaining relevant certification. Consequently, this will also reduce accident rate and improve customer (users)

management on the waterways. Lastly, government should dredge the shallow river course to aid navigation on the waterways.

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