



NIGERIA **And** **SUSTAINABLE** **TRANSPORTATION**

ISSUES AND AGENDA FOR DEVELOPMENT

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Strategies for Sustainable Development of Nigerian Ship Building and Maintenance Industry

♦ OMOKE, Victor & AJIBOYE, Olarinkoye A. ♦

Introduction

Shipbuilding and maintenance business is just as lucrative as port services. It is another gate to enriching a nation's economy. Nigeria's underdevelopment has however blinded her to this lucrative side of maritime trade and thus debarred her from benefitting from the opportunities inherent in the area. Instead of the expansion that the industry ought to experience, what is happening is that activities around the sector have been dwindling. The decline in shipbuilding and maintenance services obviously has resulted in low contributions to the national Gross Domestic Product as earnings by the industry, too, has seriously plummeted. In fact, the sector is one of those in severe recession. It has to be acknowledged that efforts have gone into reactivating the industry, but no remarkable result has been achieved. This is besides the several learned articles and opinions that have been expressed in an attempt at explaining the travails of the industry.

This chapter is therefore another attempt at breathing freshness into the undying subject of ways to resuscitate the comatose Nigerian shipping industry. Its objective is to search for strategies that can lead to sustainable development in the industry. This will enable the industry to compete favourably with its counterparts from developed nations apart from boosting the economy of Nigeria through local and international earnings. The chapter begins with exploration of the history of shipbuilding in Nigeria as well as an overview of the industry in the world. Next, the factors militating against shipbuilding in Nigeria are considered, then ending with consideration of some of the strategies to rescue the situation and put the industry on the path of sustainable development in Nigeria.

Objectives of Study

Three objectives underlying the study are: (a) to look at the shipbuilding and maintenance industry within and outside Nigeria; (b) consider the problems and weaknesses of Nigerian shipbuilding and maintenance industry; and thereafter (c) examine the strategies towards achieving sustainable development of Nigerian shipbuilding industry.

Brief History of Dockyard Developments

The emergence of dock and port operations has its roots in the colonial era. Then, the most prominent among the shipping establishments were the old Marine Department

known as Nigerian Ports Authority) and the Inland Waterways Department. The Inland Waterways Department includes (a) the shipways at Nigerian Port Authority dry dockyard at Apapa, Lagos; (b) the shipways at NPA dry dockyard in Port Harcourt; (c) the shipways at Inland Waterway yard in Calabar; and, (d) the graving dock at NPA yard in Calabar. Others are: (e) the shipways at Inland Waterways Department yard in Warri; (e) the shipways at NPA in Warri, Delta State; (f) the shipways at NPA yard in Burutu, Delta State; (g) mini shipways and small vessels building facilities in Ogburnasi, Akwa-Ibom State, formerly known as Opobo boatyard; and, (i) McDermott shipyard or shipway at Warri.

The capacities of all the above yards are not so different from one another in terms of their facilities and utilisation. They all hover around the periphery of relative substandard operation. Another observation is the proximity of most of the shipways. They all started well but went through a period of poor continuity in their operations. Owing to inefficient and substandard operations, the government eventually scrapped most of the shipways. The ultimate result is that Nigeria does not have a shipbuilding industry. People erroneously refer to ship repair yards as shipbuilding yards. At present, Nigeria has about 19 ship repair yards providing services such as dry-docking for repairs, inspection, refurbishment, maintenance, alteration, hull and machinery repairs, welding, blasting and painting (Usoro, 2012).

Economic Trend and Nigerian Shipyards

Economic influence is indispensable in the business operations of the shipyard in the sense that it requires high capital investment and foreign exchange at the minimum. In the early 1960s when the Nigerian Naval shipyard was established, the Nigerian economy compared favourably with any of its European counterparts. The Nigerian currency even attracted more value than most European currencies, thus there was a flurry of new construction activities and the refurbishment of existing infrastructure. Wages of labour were also relatively lower than obtainable in competing countries. This trend continued up to the late 1970s but by the beginning of the 1980s, the depreciation of the local currency removed the gain and set Nigeria on a new economic path especially as its currency could no longer compete favourably with the world's major currencies. Because of this trend, businesses were seriously adversely affected and many new ventures could not be started. The resultant drastic economic slump left many local firms and factories prostrate including those in the marine industry (e.g. Naval Shipyard, Port Harcourt). It became very inhibitive to import with the devalued local currency for ship construction. Other sundry disincentives were inflationary pressure, labour wages that were no longer competitive, and excessively-high overhead cost that forced organisations and business firms to review continuously upwards their operating cost. These economic stabilising effects also affected refurbishment because it became expensive too. The acute difficulty

of access to needed raw materials accentuated by government economic restriction measures worsened the already-complicated situation.

Table 34.1: Ship repair yards in Nigeria

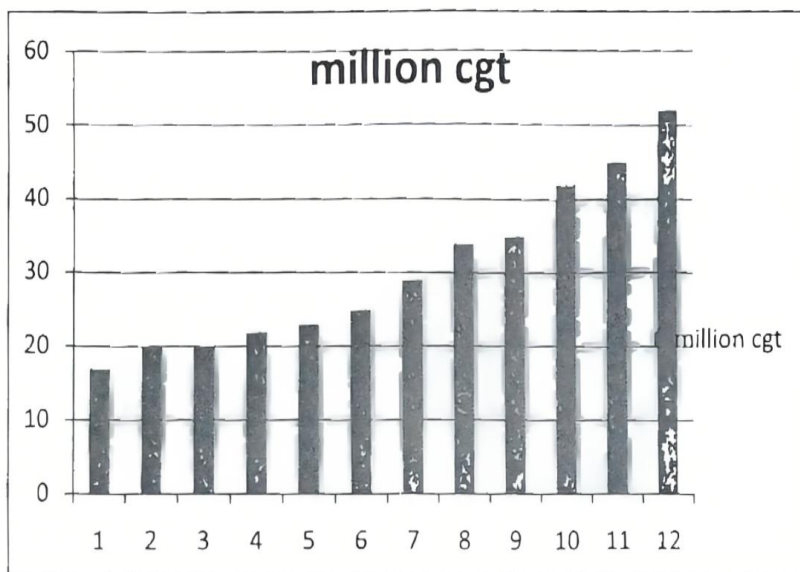
S/N	Name	Facility	Location	Remarks
1.	Nigerdock	30,000T, Dry-dock Plus 3,000 tons floating dock	Lagos	Functional
2.	Damen	180T, Syncrolift	Lagos	Partially functional
3.	Continental Shipyard	6,000T, Floating Dock	Lagos	Functional
4.	Naval Dockyard	Grave Dock	Lagos	Functional
5.	Nigeria Ship Builders	150T, Slipway	Port-Harcourt	Temporarily
6.	Naval Shipyard	150T, Slipway	Port-Harcourt	Partially functional
7.	W.A. Drydocks Ltd	2500T, Floating Dock	Onne	functional
8.	Nigerian Port Plc.	100T, Slipway	Port-Harcourt	Not functional
9.	Technitrade	250T, Floating Dock	Warri	functional
10.	Nigerian Ports Authority	Slipway	Warri	Not functional
11.	Nigerian Ports Authority	Slipway	Burutu	Not functional
12.	Nigerian Ports Authority	Grave Dock	Calabar	Not functional
13.	Starzs Shupyard	500T Floating Dock	Onne	Functional
14.	Ed-Zachariah		Port-Harcourt	No information
15.	Oscar Maritime Limited	700T	Warri	..
16.	Steelways Limited	1,200T	Warri	..
17.	Niger Benue Transport Co	400T	Warri	..
18.	Python Engineering	1000T	Lagos	..
19.	Ijora Fisheries	100T	Lagos	..
20.	Taraba	100T	Port-Harcourt	..
21.	Atlantic Star Shrimpers	100T	Lagos	..
22.	Underwater Engineering	1000T	Lagos	..

For the local shipyards, the combined effect of the harsh economic climate was serious reduction in the growth and expansion of the sector. As Table 1 indicates, almost 85 per cent of them had gone out of business (Usoro, 2012).

Economic Trend and World Shipbuilding

While the 2008 global economic downturn affected all world economies to some degree, the global ship building business was barely affected; rather, there has been a consistent growth that became significant over the last several years with 2010 recording the highest level of production as shown in Figure 1. The reason for the growth in output

Figure 34.1: World Shipbuilding Statistics



Source: IHS-Fairplay World Shipbuilding Statistics, various editions

in the midst of one of the most severe global recessions seen in many decades was attributable to the fact, before the recession started in late 2007, virtually every part of the world placed order for ships. In fact, the order was unprecedented since the turn of the 20th century. With full order and the corresponding contractual obligation to deliver the new vessels at specified dates, yards around the world continued production at record levels, even though the challenge was on the ship buyers' side who frequently had to struggle to source finance from collapsing capital market around the world. As a matter of fact, some orders were cancelled, some were defaulted, while the delivery of some had to be postponed but majority of the orders was completed (IHS, 2009a).

Nevertheless, ship builders were affected by the market conditions in different ways. Some shipbuilding countries grabbed the opportunity to increase their share of the world production while, for others, output fell. Turkey yards were among the latter group. Also, the turndown engineered a significant structural change in world shipbuilding as some of the countries, formerly with modest output, greatly increased their participation

in the industry, positioning themselves to make further inroads into previously-established shipbuilding countries. China is the most obvious example, as it moved from being the world's third largest, to the world largest producer, within a space of two years as shown in the table^[14] below. However, there were other beneficiary countries from the economic downturn, particularly the Philippines and Vietnam (IHS, 2010b).

Table 34.2: World's Top 10 Producers of New Ships by Cgt

Rank	2010		2008	
		%		%
1	China	35.56	Korea	34.59
2	Korea	28.94	Japan	23.08
3	Japan	19.04	China	21.88
4	Germany	1.66	Germany	2.77
5	Italy	1.50	Turkey	1.93
6	Philippines	1.19	Italy	1.77
7	Vietnam	1.09	Poland	1.37
8	Turkey	0.90	Romania	1.26
9	Romania	0.88	Chinese Taipei	0.91
10	Chinese Taipei	0.72	Croatia	0.87

Source: IHS Fairplay World Fleet Statistics 2009 and 2011

The strong growth of China between 2008 and 2010 is remarkable. Table 2^[15] only tells part of the story, because while it clearly shows the relative strength between the top 10 producers, it does not provide any guidance on the individual production output and or offer further analysis to give a better appreciation of the dynamics of the industry over the period (IHS, 2010b). Table 3^[16] shows detailed production data for both 2008 and 2010 with a comparison of the rate of change in output of the top 16 producers in 2008. It clearly shows the extraordinary growth of China, with more than doubled production capacity over the two-year period. Only Philippines and Vietnam tried to match this feat but, still, at a much lower level. The evidence is clear that these three shipbuilding countries had accumulated orders before the 2008 financial crisis. Obviously, they could not but experience a boom over the two-year period (IHS, 2010b).

The order data represent accumulated bookings by yards for a future delivery date, and thus, define the amount of work in hand at a specific point in time. It offers a good glimpse of how successful yards have been in capturing new orders. Finally, orders are

Table 34.3: Outputs and Rates of Changes between 2008 and 2010

Economy	2010 cgt '000s	2008 cgt '000s	Change cgt 2008-2010	Change %
China	18.91	9.25	9.66	104.43
Korea	15.00	14.60	0.40	2.74
Japan	9.85	9.76	0.09	0.92
Germany	0.85	1.17	-0.32	-27.35
Italy	0.77	0.75	0.02	2.67
Philippines	0.61	0.31	0.30	96.77
Vietnam	0.56	0.26	0.30	115.38
Turkey	0.47	0.82	-0.35	-42.68
Romania	0.47	0.53	-0.06	-11.32
Chinese Taipei	0.37	0.39	-0.02	-5.13
Poland	0.29	0.58	-0.29	-50.00
Croatia	0.24	0.37	-0.13	-35.14
USA	0.34	0.36	-0.02	-5.56
Malaysia	0.31	0.31	0.00	0.00
Finland	0.19	0.30	-0.11	-36.67
Denmark	0.17	0.26	-0.09	-34.62
World Output	51.87	42.30	9.57	22.62

Source: IHS Fairplay World Fleet Statistics 2009 and 2011.

also good yardsticks in terms of performance with a proviso that such evaluation does not take into account cancelled and/or deferred orders (IHS, 2010b).

Table 34.4: Total World New Ship Building Order Book

Rank	Nations	No of ships	CGT(000s)	%
1	China	2,967	48,922	38.22
2	South Korea	1,357	39,145	30.58
3	Japan	1,105	19,856	15.50

4	Philippines	108	2,686	2.10
5	India	257	1,927	1.51
6	Vietnam	252	1,877	1.47
7	Germany	55	1,449	1.13
8	Italy	47	1,386	1.08
9	Brazil	116	1,278	1.00
10	Chinese Taipei	42	1,050	0.82
11	Turkey	162	963	0.75
12	Romania	80	832	0.65
13	Indonesia	136	563	0.44
14	Spain	83	541	0.42
14	Netherlands	70	461	0.36
	Rest of the World	985	5,167	3.97
	Total	7822	128013	100.00

Source: IHS Fairplay "World Shipping Statistics", December, 2010.

Factors Militating against Shipbuilding in Nigeria

It is necessary to highlight the factors affecting shipbuilding in Nigeria to understand the issues that have to be faced in the development of the industry. Some of the factors are:-

i. Human Capital Development: In terms of shipbuilding knowledge and technology, Nigeria, may be one of the most-populated countries in the world, but she lacks the human capital with requisite skill and experience in shipbuilding. Even those with some measures of training do not have the exposure needed to sustain a shipbuilding industry. As a result, Nigerians only undertake minor, ancillary jobs like painting and welding while the main professional and highly-skilled work like design and construction are handled by the technical experts from overseas. Though in some cases, organisations send a few employees abroad for courses or training which is expensive, even then, such trainings cannot give the same level of proficiency compared to that of the experts.

ii. Trade Level, Congestion and Delay: Trade level refers to the extent of commercial, industrial and agricultural activities. As the trade level increases, the number of traffic calling at the ports and the docks similarly increases and vice versa. With the economy undergoing a recession, the number of vessels calling at the ports and docks, of course, will decline. Even with the few number of vessels, records show discrepancy in the distribution of vessels undergoing servicing among the available dockyards. They end

...destining together and seeking the services of the best shipyards. In other words, some shipyards like Niger Dock may schedule their maintenance services from the beginning to the end of the year, making it impossible to find a slot for vessels seeking services while other shipyards are not patronised.

In some cases, a dockyard's schedule may be so tight that it may not be able to meet the demand within a specified date or time, which may lead to congestion or/and delay which in most cases are costly in shipping.

iii. **Global Factors:** The world is said to be a *global village*. In other words, nations that want to compete in the international arena must be prepared to meet global standards. Nigerian shipyards still lag a lot behind the yards of other nations. Technologically-advanced nations like America and Japan have more sophisticated yards for better services and fabrication. It implies that Nigerian shipyards stand no ground in terms of competition, which is a decisive factor in patronage in shipping industry.

iv. **Technological Constraints:** No shipyard in the country has commenced the building of standard vessels. They can only fabricate small crafts and handle routine maintenance services. The truth is that a vessel is not a product of a single shipyard. What a shipyard does is mainly the design and construction of the ship's hull. Other components like the engines, boiler and automation gadgets are contracted out to vendors who fabricate and install them in the vessels. It means that Nigeria does not have the level of technology to support shipbuilding. Owing to this technological gap, there are bound to be great differences in performance and standard of jobs done between Nigeria and the foreign countries. This is the main reason behind shipowners preferring to service or build their vessels outside Nigeria.

v. **Finance:** Shipping is a capital-intensive industry. Shipbuilding ranks as the highest area of investment. This is the main source of disincentive in the industry. Increasingly, the government is finding it very difficult to finance the docks. Though the few performing docks are operating as public liability companies, even at that, they are incapable of meeting their financial obligations. Nigerian financial institutions do not finance vessel construction due to their restricted financial base while international financing has been difficult. Similarly, getting local insurance to underwrite a vessel is problematic. Indeed, finance constitutes a serious obstacle to the Nigerian shipping industry.

vi. **Availability of Raw Materials:** It is regrettable that Nigerian dockyards rely on importation of materials for ship construction. The cost of shipment of these materials and the import duty or tariff payable on them discourages efforts at shipbuilding and providing maintenance services.

vii. **Strike and Labour Activities:** The Nigerian labour unions are prone to strikes. The strikes occur at any period, once they desire the government or management to

succumb to their demand. Called at most effective periods, the strikes are targeted frequently to cripple activities or service when organisations could ill afford them. Indeed, from the concept of operational relationship and inter-sectoral dependency, a strike in any sector of the economy is bound to affect the other sectors. For instance, petroleum sector strike naturally will paralyse all the other sectors. The frequency of the strikes therefore affects dock activities adversely, for vessels that ordinarily should have been serviced by them are diverted to other nations.

viii. **Natural Phenomena:** Strong wind, bad weather conditions, strong current, tidal flood, to highlight a few natural hazards affect dock operations. For instance, it has been established that the operation of a large-capacity crane in a wind exceeding 30 mph is dangerous. While it is proven that productivity is a function of weather condition, records show that, in a year, the average expected number of clear days is 115 clear days, 130 and 120 days of apparent and cloudy respectively and 2 days of fog. This helps to understand one of the causes of congestion and inability of the firms to meet up with schedule.

Strategies for Sustainable Nigerian Shipbuilding Industry

It is now necessary to look into the ways to reposition the Nigerian shipyards to enable them compete favourably with their international peers.

i. **Development of Steel Industry:** This is a *sine qua non* for the shipbuilding industry. Shipbuilding and construction makes use of steel as the basic material (WSA, 2010). Virtually all Nigerian heads of state over the years have expressed the intention of reactivating the Ajaokuta Steel Mill. It is a pity that there is nothing to account for the huge amount of money sunk into the project. It is only an avenue of siphoning public fund. Apart from Ajaokuta, other steel mills like Aladja Steel Mill suffered the same fate. The result is that there is no functioning steel mill in the country. Nigeria relies totally on importation, not realising that the exporting nations would never want her to develop her own steel industry. Iron and steel production is the beginning of the step to industrialisation and mechanical age. If Nigeria must join the league of industrialised and advanced nations, she must first develop her iron and steel industry. This will also give her a footing in the shipbuilding world.

ii. **Energy Supply and Support:** Shipbuilding and maintenance yards require energy in the same way that they need steel as raw material. It is the obligation of the government to ensure constant power supply. In Nigeria, however, the issue of the epileptic supply of public power is constant. The implication is that shipyards would have to provide their independent power supply, the cost notwithstanding. In an ideal environment, the shipyard would not only benefit from a stable supply of electricity, it would in addition enjoy at least 50 per cent discount of the consumed electricity cost (OECD, 2011).

Human Resources Development: There is an urgent need to restructure and re-examine Nigerian tertiary institutions to match their Western counterparts so that they can produce the required human capital in the shipping industry. The situation where Nigerians at the various shipyards undertake only jobs requiring little or no skill while the difficult jobs are left to the experts from the West is worrisome. Why should the experts be invited in the first place when there are people that majored in Maritime Technology, Marine Engineering and Naval Architecture? The answer lies in the quality of training. Nigeria must therefore train her citizens in shipbuilding if the nation must move forward in that sector.

iv. **Finance:** The enormous capital required in shipbuilding industry calls for a concerted effort so that the financial requirements can be met. Attempts should be made to boost the long-term financial base of the shipyards. To survive, they must be in a position to secure long-term capital easily. Adequate finance to the shipyard is only however one side of the coin. The other is to encourage organisations and individuals interested in maritime ventures to do so and that is by making access to investment funds easy. This will boost the volume of maritime activities and increase the potentials of the shipyards. It is also the sure means of boosting the Nigerian economy. It is also important to mention that government should finance the activities of the shipyards. The government can do this by approving some funds in its annual budget to support growth and development of the shipyards. They can also grant them licence to source fund in the equity market. Another good alternative is by providing and supporting export credit scheme (OECD, 2011).

v. **Exemption from Customs Duties and Taxes:** As part of government's encouragement of investment in shipbuilding and maintenance in Nigeria, it will be highly rewarding if an *Investment Encouragement Certificate* is issued to investors as a sort of tax holiday. It means that imports of materials, machinery and equipment meant for shipbuilding and maintenance would be eligible for customs duty exemption based on evaluation of the project along laid-down criteria by the appropriate authority. Such materials should also be exempted from value-added tax. Equally, corporate tax should be minimal until the rate of return on investment reaches at least 30 per cent of the invested capital (OECD, 2011).

vi. **Technical Partnership:** This is a very viable option for the development of Nigerian shipbuilding industry. Since the technological standard of the nation lacks international comparative advantage, it is advisable to enter into partnership with any of the shipbuilding firms from technologically-advanced nations so that they can provide the technical support and assistance needed. As the experts work with Nigerians on daily basis, there is a tendency that the skills and technology will be transferred. Another advantage is in the area of capital sourcing. If the organisation is a partnership, an

overseas partner may provide the equity participation required in financing the project. Both ways are good means of attracting foreign investment.

vii. **Building by Parts:** This is another reliable strategy. The landscape of shipbuilding shows that Nigeria has not been able to launch a vessel. This dream can be achieved by perishing the thought of wholesale construction of vessels. A safe and reliable option is to build it in parts. It means each of the shipyards will undertake the construction of a major component of a vessel, and at the end, all the built components will be assembled together. With this process, shipyards may even start receiving order from major firms abroad to assist in fabricating certain parts of the vessel that are always in great demand in maintenance services. By the time Nigerian shipyards attain proficiency in building by parts, they will ultimately become close to constructing a full vessel, since the parts can be coupled to a full vessel in matter of the days.

viii. **Political and Economic Reform:** Reforming the political system is one of the first issues that should be addressed whenever any country wants to move towards any meaningful development. There can be no argument that Nigeria needs political reform in order to have a meaningful development. There is need to have a system that ensures that government supports innovations, sponsors researches as well as builds scientific laboratories and workshops. The fact is that, as Nigeria is not producing most of the things she needs, the country has become heavily-dependent on external sources. The orientation of the country has to change. Nigeria must work towards self-reliance and her citizens imbibe the culture of consuming Nigerian products and services.

Similarly, there can be no development without peace. Investment thrives only in a peaceful political atmosphere. If Nigerians are apprehensive about their investment because of political chaos and turbulence like the Boko Haram insurgency, what are the foreigners expected to do? They simply will not leave the shore of their nations, specifically for Nigeria. Hence, there is no greater incentive to attracting foreign direct investment than providing a peaceful and confidence-building political atmosphere.

Conclusion

Shipbuilding and maintenance is a viable investment opportunity that Nigeria can richly benefit from by tapping her maritime endowments. The survey of the industry showed that the sector was viable up to the 1980s when the Structural Adjustment Programme (SAP) led to the devaluation of the Nigerian currency. However, SAP became one of the factors that have been militating against shipbuilding in Nigeria. Others have also been fully examined and the strategies to revive the industry and make it sustainable discussed. Coupled with the political will to apply the strategies proffered, shipbuilding will not only be revamped but will also thrive to the point that Nigerian shipbuilding industry can become a major contributor to the country's foreign earning. In this wise, it recommended that:

Nigeria should develop her iron and steel industry to give the country the required raw materials and potential to undertake shipbuilding and maintenance services;

Energy production and supply should be made reliable and concession granted to the shipbuilding industry;

Nigerian citizens should be properly trained in shipbuilding and maintenance;

Long-term capital funding should be made available and accessible to investors in the industry;

Investment Encouragement Certificate should be issued to the investors in shipbuilding and maintenance services;

v. Nigerian shipyards should enter into partnership with reputable shipbuilding firms in technologically-advanced nations;

vi. Rather than waiting until propitious time to build a whole vessel, each of the shipyards can start to concentrate on building agreed parts with a view to collaborating to assemble the parts to produce a vessel in the end.

vii. Finally, everyone should be part of the concerted effort to ensure a peaceful and friendly investment environment in Nigeria.