



Analysis of Fabrication Yards in Nigeria

Presented By

Directorate of Planning, Research and Statistics (PRS)



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Introduction



Pursuant to the approved Research and Statistics framework of NCDMB, we present data analytics on fabrication yards in Nigeria. Description of the data is presented below

1. What to measure:
 - a. HCD- employment and training
 - b. Yard capacity
2. Data source:
 - a. Functional fabrication yards in Nigeria
 - b. Egina Project M&E report
3. Number of yards covered
 - a. Sample population -25 fabrication yards
 - b. Response- 9 fabrication yards
4. Methodology
 - a. Designed questionnaire template
 - b. Administered questionnaire
 - c. Collated data
 - d. Subjected data to analytics
5. Data period-
 - a. Fabrication Survey 2017
 - b. Egina project monitoring report Q1, 2019

Research Methodology



Data Gathering

Analytics

Policy Recommendation

1. NCCF engaged Fabrication yard on objective of data
2. Designed questionnaire
3. Transmitted template to fabrication yards
4. Transmitted data to R&S team
5. R&S extracted data related to local content indicators
6. M&E Egina project report

1. Descriptive
2. Diagnostics
3. Prescriptive

1. Categorize fabrication yard into 3 tiers
2. Mandate fabrication yards to submit data on Local content indicators on the NOGICQS platform
3. Investment in training should be a local content requirement in bids
4. M&E oversight should be carried out for impact assessment
5. The Board should work with Mines and steel sector to develop local steel industry
6. There should be establish comprehensive baseline data

Research Template

S/N	Raw material*	Average annual spend	Average volume consumed	Key source		Key suppliers
				Local	Foreign	

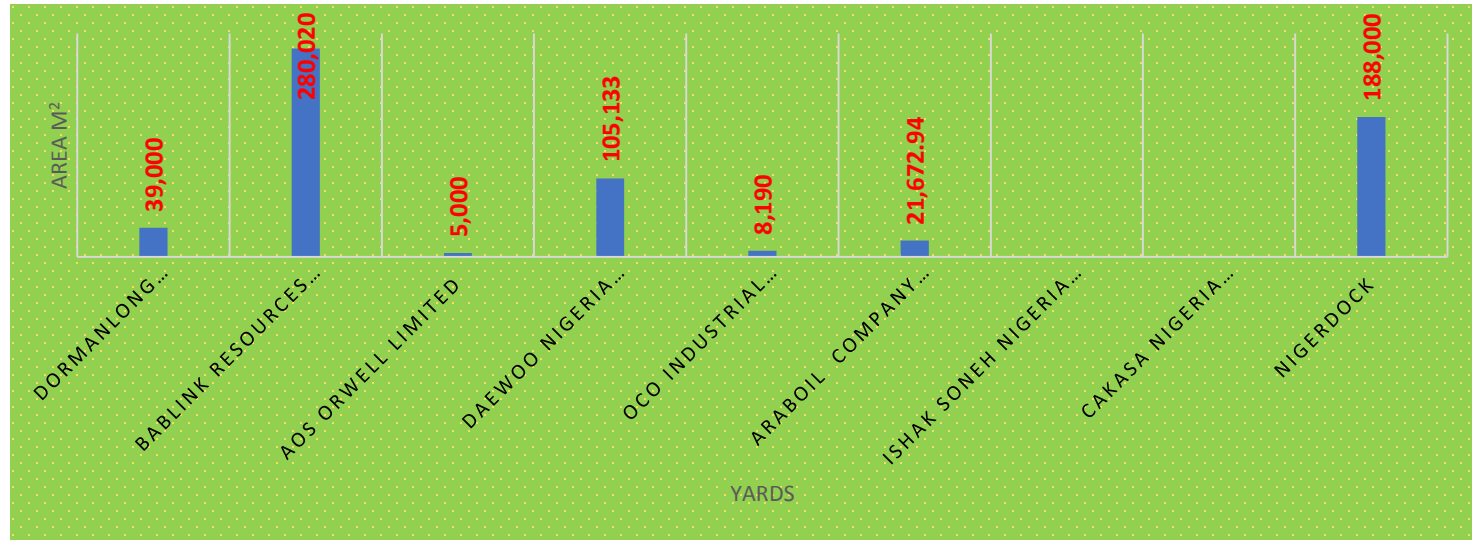
	External Yard	Area Size (m2)	Address and Location	Distance from water		Location and Shore Depth of water body
				nearest body	water	
1						
2						

Data collation date- 2017

Data Analytics: Yard capacity by land size



Descriptive



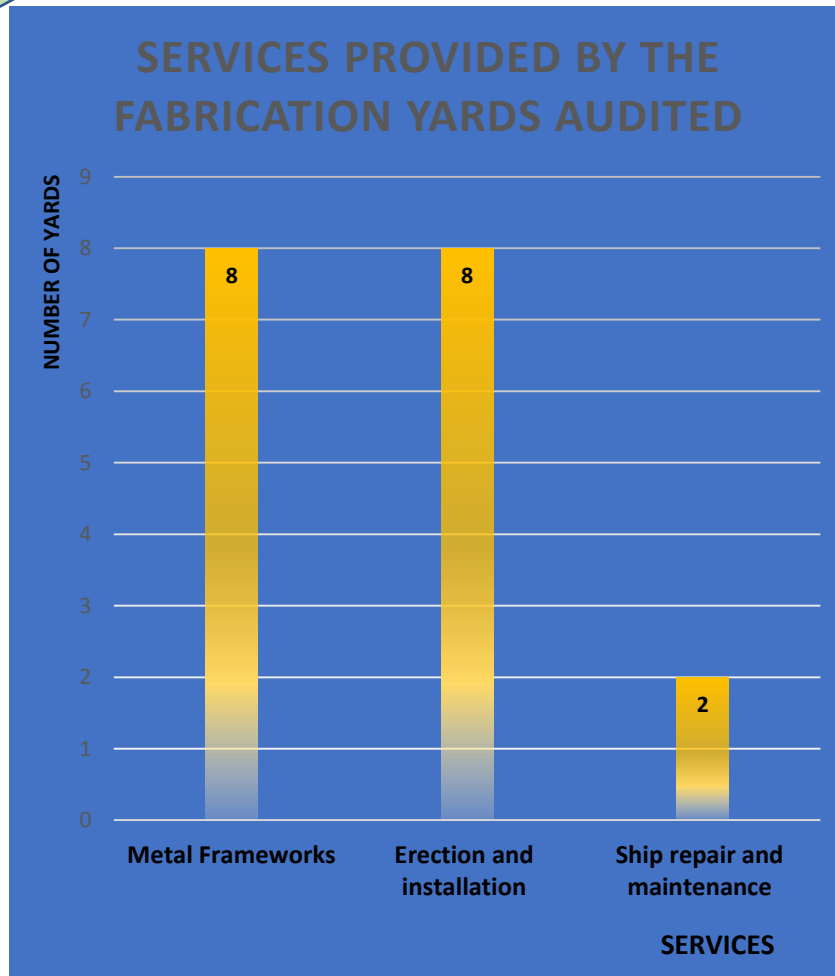
Diagnostics

1. The 9 fabrication yards have total area of 642,015.94 m².
2. The top 5 yards by land size account for 98% and they are Bablink Resources with 280,020 m², Nigerdock with 188,000 m², Daewoo with 105,133 m², Dormanlong with 39,000 m² and Araboil company with 21,672.94 m²
3. AOS Orwell limited has the smallest yard with 5,000 m² while there was no data submitted by Ishak Soneh, and Cakasa Nigeria limited for their areas
4. Total yard size of top fabrication yards in South Korea are Hyundai heavy industry Ulsan 7,203,404 m², Samsung heavy industries has 217,695 m²

Data Analytics: Scope of Fabrication



Descriptive



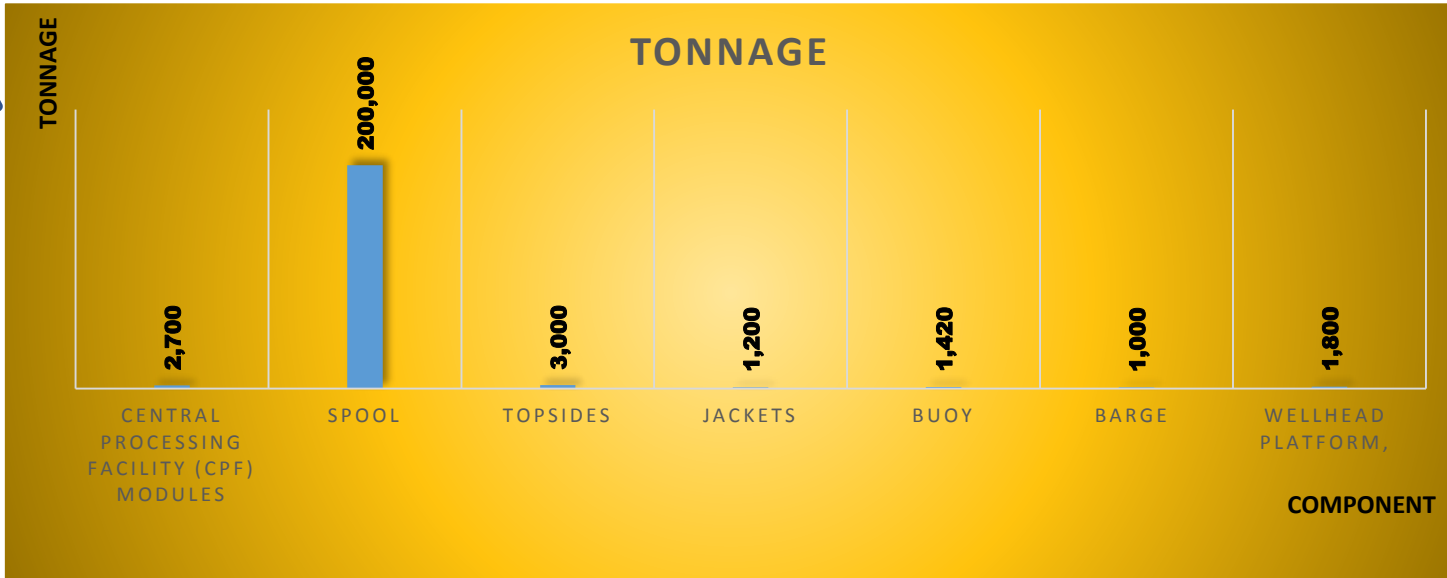
Diagnostics:

1. The fabrication yards provide 3 major services- ship building, repair & maintenance, metal frame fabrication and erection and installation of steel structures .
2. Out of the 9 yards that responded to the questionnaire, only 2 are into ship repair and maintenance namely:
 - NigerDock
 - Bablink Resources Nigeria limited
3. 8 are into metal frameworks and erection & installation of production platform namely:
 - I. Dormanlong Engineering Limited;
 - II. Bablink Resources Nigeria limited;
 - III. AOS Orwell Limited (Titan Tubulars Nigeria Limited);
 - IV. Daewoo Nigeria limited;
 - V. OCO Industrial Services Limited;
 - VI. Araboil Company Limited
 - VII. Ishak Soneh Nigeria Limited (in partnership with TEKNITRADE NIGERIA LIMITED);
 - VIII. NigerDock
4. From this analysis most of the yards do not have capacity for multiple fabrication scope

Data Analytics: Tonnage of fabrication executed



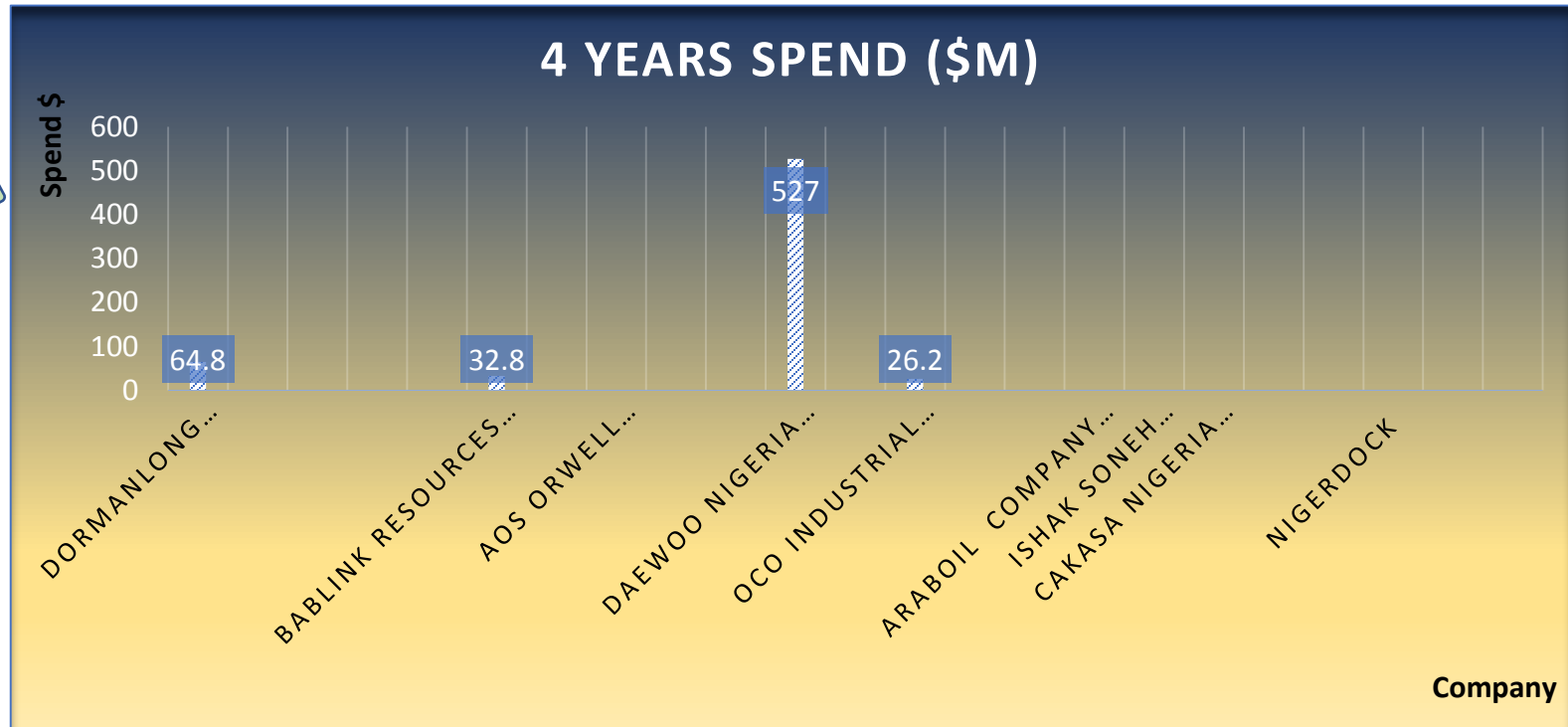
Descriptive



Diagnostics:

1. The total fabrication tonnage achieved in 2017 was 228,260 Tons
2. Top 5 fabricated components are Spool - 200,000 Tons, Topside modules - 3,000 Tons, Central Processing Facility (CPF) -2,700 Tons, Buoy- 1,420 Tons and wellhead platform- 1,800 Tons

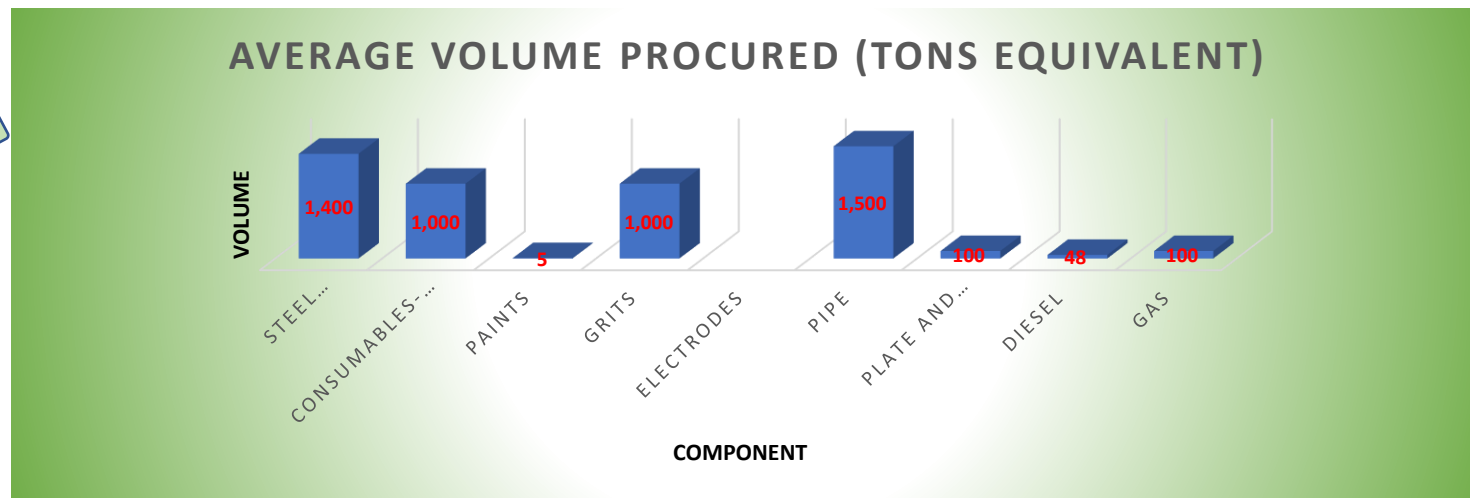
Data Analytics: Value of materials procured



Diagnostics:

1. During the period 2013-2017 \$650,841,216 was spent by fabrication yards on procurement of materials
2. Daewoo Nigeria Limited recorded the highest spend of \$527 million representing 81% of the spend
3. Considering that Daewoo is among the top 5 fabrication yards in terms of land size the result indicates optimal use of existing capacity

Data Analytics: volume of materials utilized



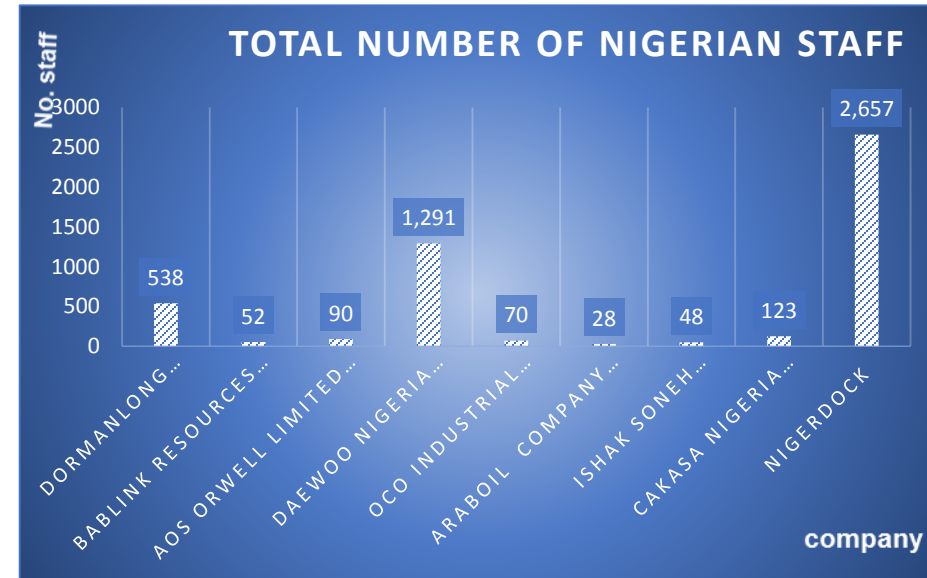
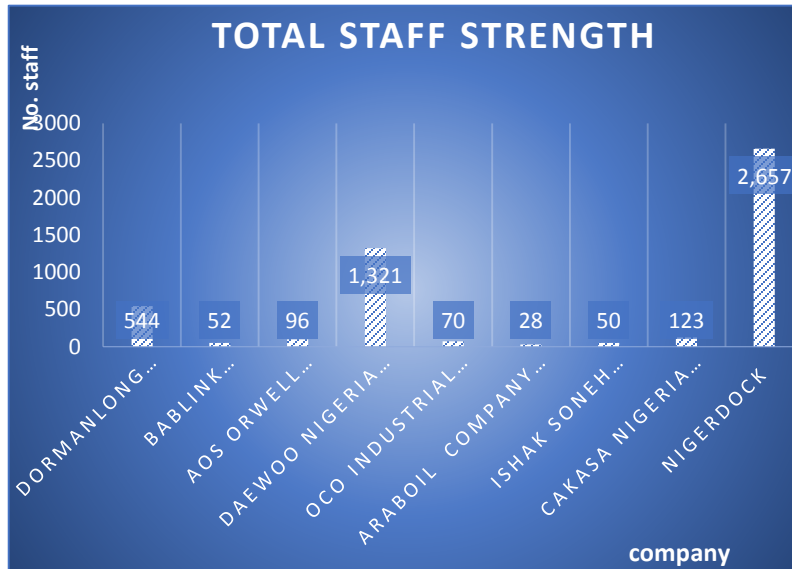
Diagnosics:

1. Only 3 companies submitted volume of material consumed, the companies are: (i) Dormanlong Engineering Limited (ii) AOS Orwell Limited (Titan Tubulars Nigeria Limited) and (iii) Ishak Soneh Nigeria Limited (in partnership with TEKNITRADE NIGERIA LIMITED)
2. Out of the total consumption (5000tons), the top 5 materials for fabrication are:
 - a. Pipes (1,500tons) 30%
 - b. Steel consumables(1,400tons) 28%
 - c. welding consumables(1000tons), 20%
 - d. Grit(1000tons) 20%
2. The average annual consumption mix per yard was between 700 Tons to 12,000 Tons.

Data Analytics: Human Capital Development (employment)



Descriptive



Diagnostics:

1. Total employment across the Nine (9) fabrication yards is 4,941
2. Nigerdock has the highest number of employees with 2,657 staff representing 54% of total employment
3. Ishak Soneh Nigeria with staff strength of 50 has the least number of employees

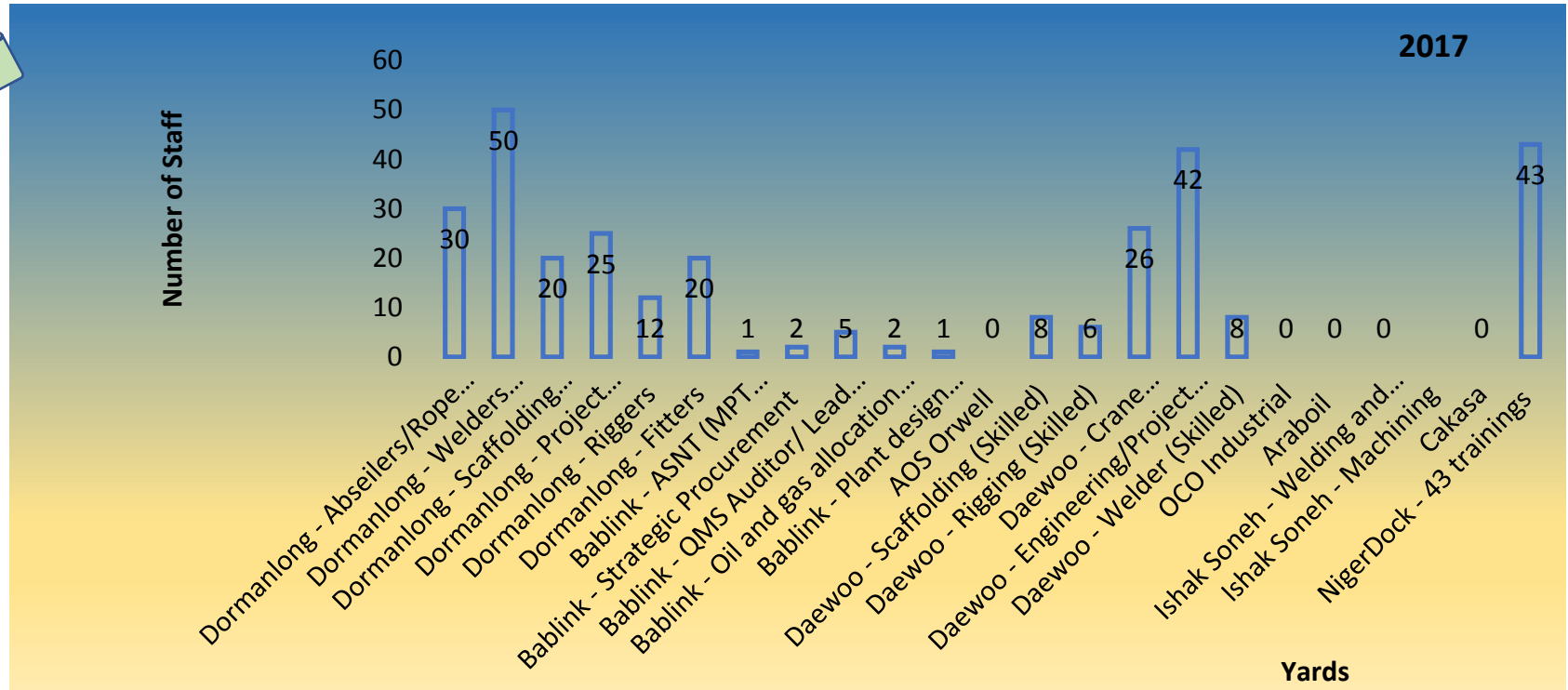
Diagnostics:

1. Of the 4,941 employee across the fabrication yards 4897 (99%) are Nigerians and 42 (1%) are Expatriates
2. Fabrication yard with the highest number of non-Nigerian workers is Daewoo Nigeria limited with 30 Expatriate while Dormanlong Engineering Limited and AOS Orwell Limited (Titan Tubulars Nigeria Limited) has 6 expatriate each

Data Analytics: Human Capital Development (Training)



Descriptive



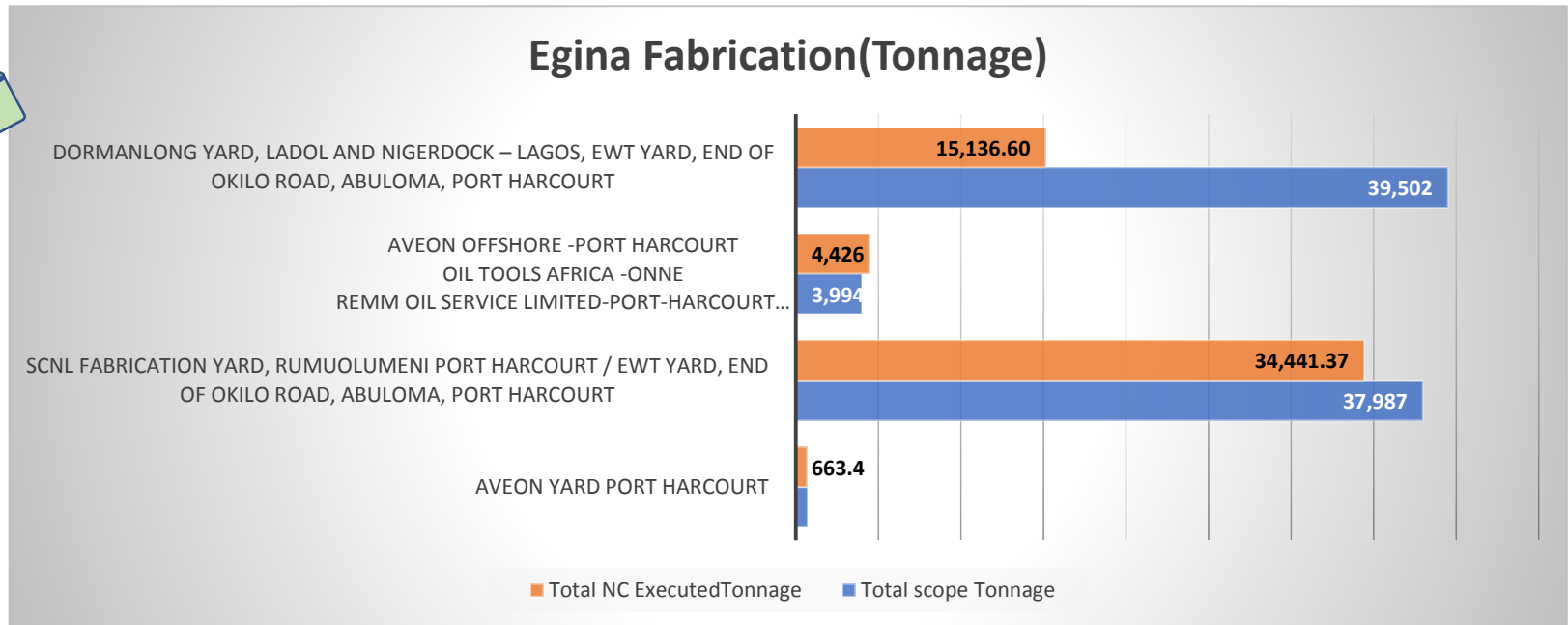
Diagnostics:

1. Total number of trained personnel in 2017 is 258.
2. Dormanlong trained the highest number of employees (157). However, this figure is 30% of its total workforce. Niger dock trained 43 of its personnel out of total workforce of 2,657 (2% of workforce)
3. Daewoo trained 7% of its workers i.e 90 out of 1,321 staff
4. Cakasa, Ishak Soneh, Araboil, and Oco Industry did not report the number of trained personnel.
5. Trend indicate that there is very little investment on HCD by the fabrication yard.

Egina Fabrication-Total fabrication scope vs NC executed (Tonnage)



Descriptive



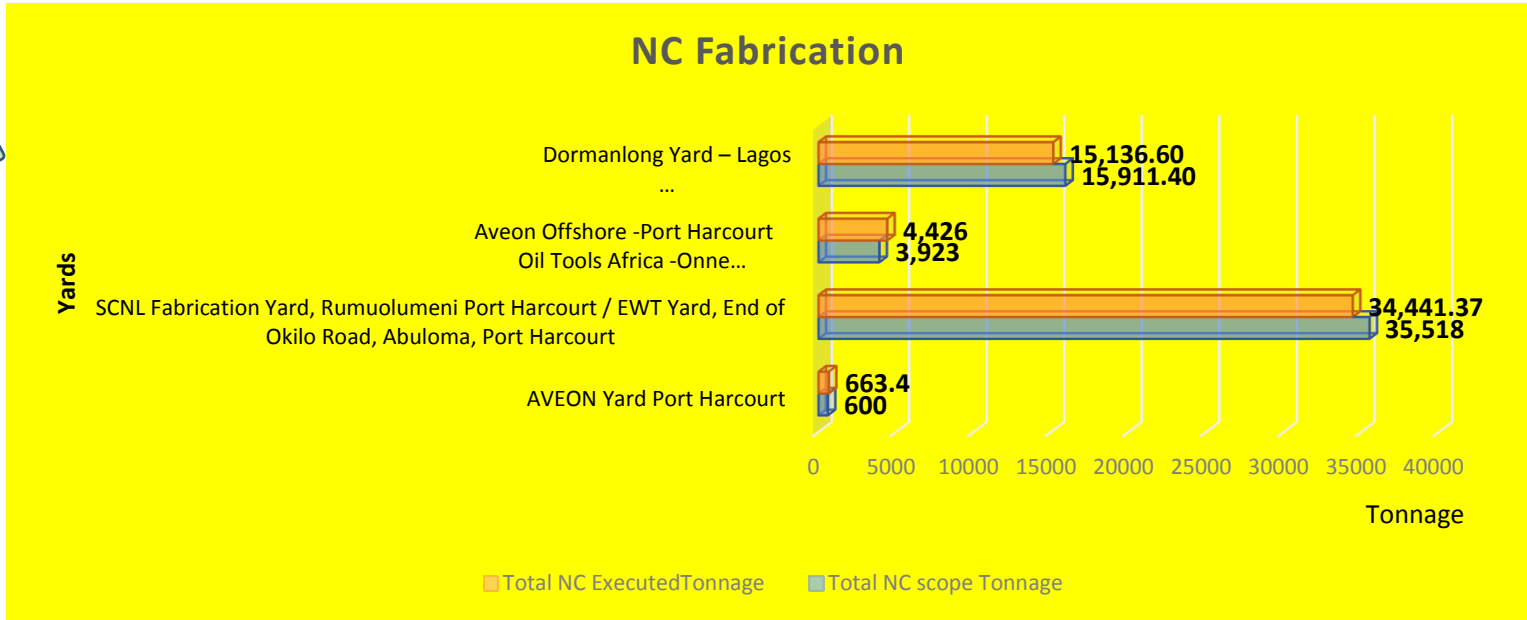
Diagnostics:

1. The total fabrication scope on Egina project is 82,183.0 Tonnes
2. Total executed NC is 54,667.37 Tonnes representing 66.5% of the total fabrication scope
3. It was observed Aveon and other yards that fabricated Subsea production systems like manifold exceeded the total fabrication scope, an indication of inadequate scoping of requirements before project commitment
4. It was also observed that for FPSO unit, there was under performance when NC executed is compared to total scope

Egina Fabrication NC scope vs NC executed (Tonnage)



Descriptive



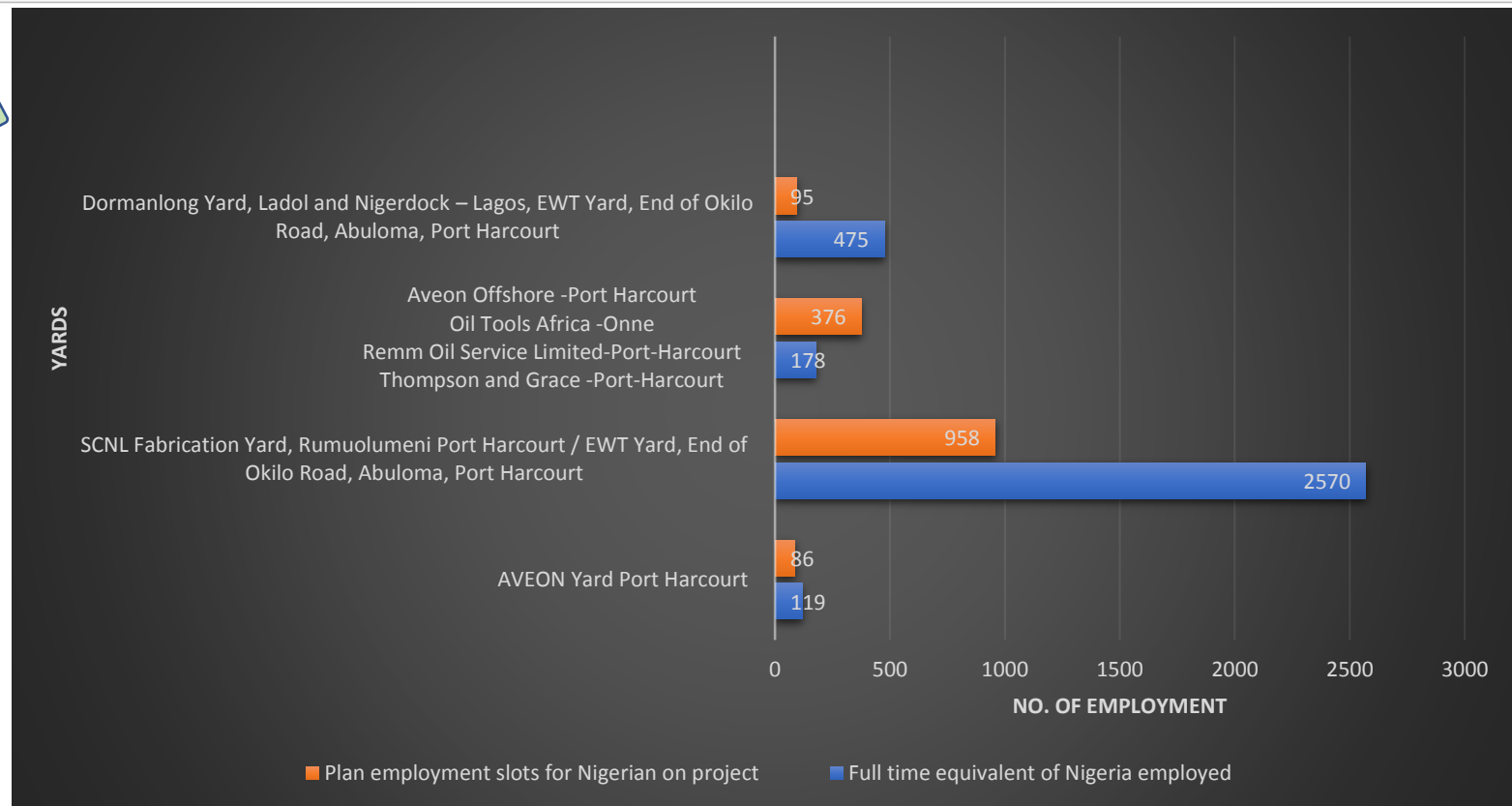
Diagnostics:

1. The total NC scope for Egina project is 55,952.4 Tonnes
2. Actual executed NC is 54,667.37 Tonnes representing 98% of approved NC fabrication scope .
3. SCNL and EWT fabrication yard jointly have the largest NC Scope (63.4%) and NC executed (63.0%) while
4. AVEON recorded the least Tonnage of fabrication with 1.1% fabrication scope and 1.2% of NC fabrication executed

Egina Fabrication(Employment)



Descriptive

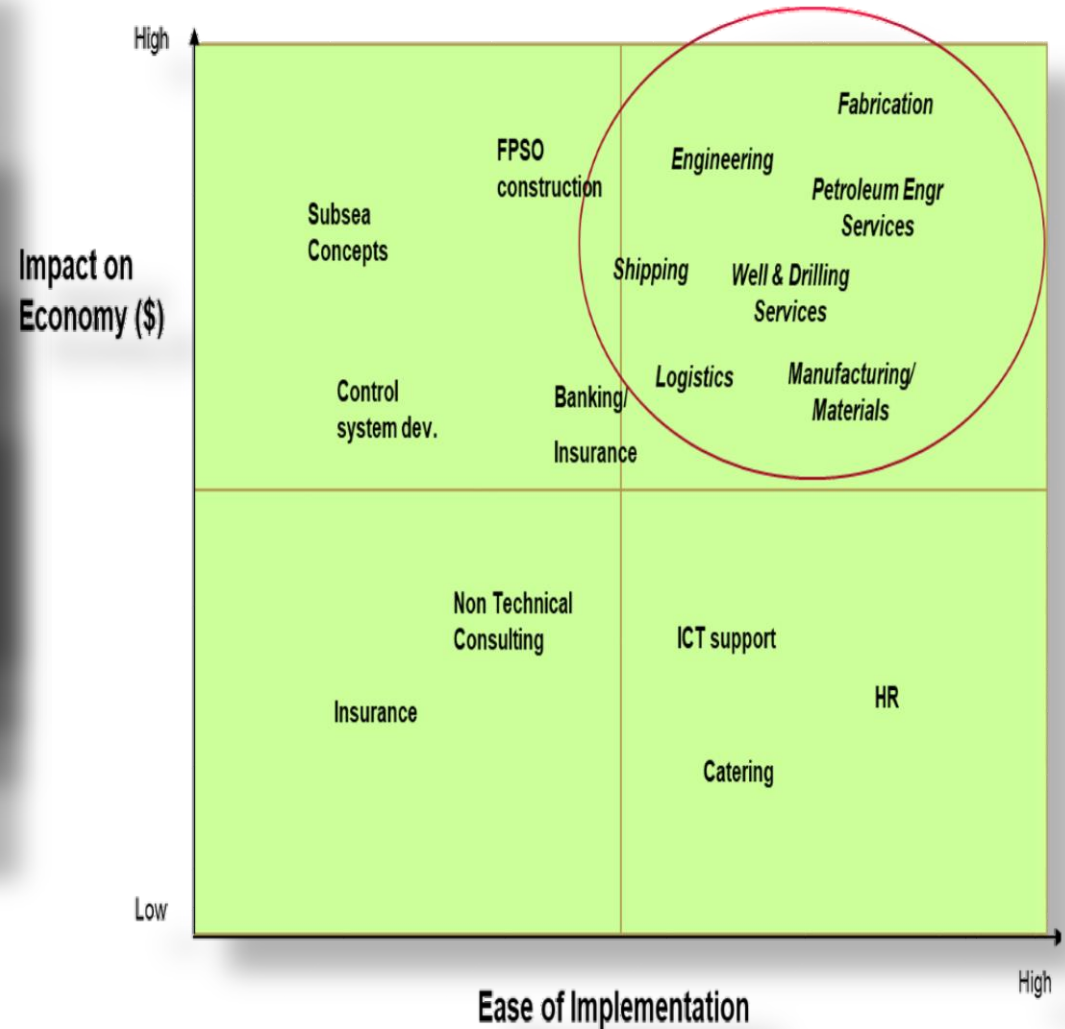
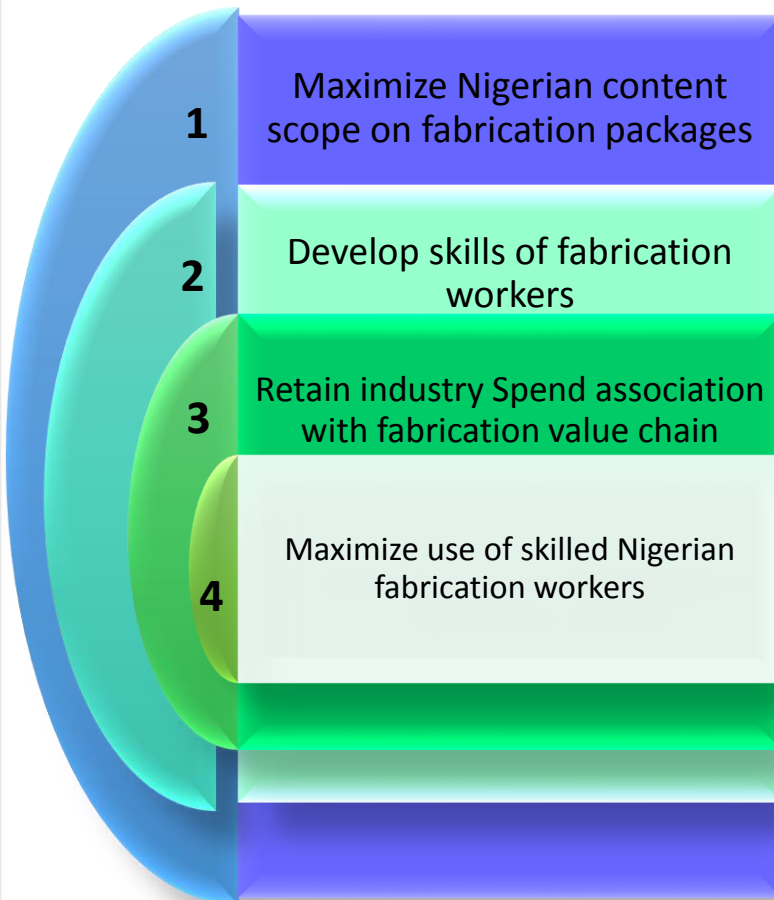


Diagnostics:

1. The total NC plan for employment on Egina fabrication scope is 3,342
2. Full time equivalent employment achieved was 1,515 representing 45% of plan
3. The dearth of skilled fabrication workers, deliberate non-compliance and schedule delays may be responsible for the less than 50% of target
4. The real cause will be unraveled during the Monitoring and Evaluation exercise



4 NCDMB Objectives for Fabrication





Prescriptive Analytics

SN	POLICY ACTION	RESPONSIBILITY	DATE
1	<p>Baseline survey</p> <p>A key component of the NCDMB R&S framework is the need to establish comprehensive baseline data of project promoters, service companies and operating companies from which data will be sourced on an ongoing basis. The baseline data is also to serve as source of information for periodic gap analysis and gap closure (capacity building) interventions. NCDMB and National Bureau of statistics are about to start the baseline survey of companies offering critical services in the industry including fabrication yards. This survey will help improve quality of data going forward</p>	R&S	Q3, 2019
2	<p>Categorization of fabrication yards</p> <p>A key action that will follow the baseline survey is to categorize the fabrication yards according to tonnage capacity:</p> <ol style="list-style-type: none">1. Tier 1: > 10,000 Tons steel structure2. Tier 2: 5,000 to 9,999 Tons3. Tier 3: < 5,000 tons	R&S, CB, PCAD	Q1, 2020



Prescriptive Analytics

3	<p>Materials demand</p> <p>The data presented indicated that there is high demand for steel derivatives which are currently import dependent.</p> <p>NCDMB should continue to work with Mines and steel sector on various programmes to develop local steel industry as a panacea to increase Nigerian content level in fabrication of oil and gas structures and platforms</p>	CB	Continuous
4	<p>Data transmission:</p> <p>The 36% response to the questionnaire is an indication of apathy of fabrication yards to respond to data request. We propose that upon completion of base line survey update of capacities on NOGICJQS not later than every 6 months should be made a mandatory requirement for fabrication yards. It should be stated that capacities published in the NOGICJQS shall be the basis for bid evaluation by the Board</p>	R&S, JQS	Q4, 2019



Prescriptive Analytics

5	<p>NCDMB Human capital development framework</p> <p>The abysmal training exposure given to fabrication workers will lead to continuous skill gaps in the industry if not addressed through policy action. We propose that the NCDMB HCD framework should provide for submission of training investment by companies to the Board . This data should be considered as part of Nigerian content requirement during bid evaluation</p> <p>The framework should also include occupational standards for fabrication workers to standardise employment and training & certification in the sector</p>	CB, PCAD	Q3, 2019
6	<p>Monitoring and Evaluation oversight</p> <p>After every EPC project close out, NCDMB may commission a study to determine Plan vs Actual impact assessment . This study will help to uncover why targets have not been met on projects to serve as lessons for future projects and where targets are met how to sustain and surpass such targets on future projects (threshold management)</p>	MED	Continuous



Limitation

- Out of 25 fabrication yards only nine (9) companies responded to the survey
- Not all the nine companies submitted relevant data such as:
 1. employment and training
 2. Spend on materials
 3. Material consumption
 4. Scope of fabrication
 5. fabrication tonnage
- Survey conclusion is that while there are competent fabrication yards of varying capacities and capabilities within Nigeria, the exact capacity and capability of the active companies not been established due to the fact that majority of the companies did not submit their completed survey.
- The baseline survey project scheduled for 2019 would address this gap



Research Team

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