

PROBLEMS FACING LOCAL MANUFACTURERS IN THE NIGERIAN AGRO-ALLIED MACHINE FABRICATION INDUSTRY

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Abstract

This study investigates the challenges and opportunities of the local industries involved in the fabrication of agro-related machinery in Nigeria. With the aid of personal interviews, on-spot assessment/visual inspection, a number of problems confronting these local industries were recorded. These include erratic power supply, cost of raw materials, level of automation, noise pollution, occupational hazards, instability in government policies, marketability and a general bias for machines fabricated locally.

The government is currently making efforts at reviving the economy, yet the priorities set in addressing the problems of the local economy may not be aligned with the actual priority problems that local companies face in their daily business. The paper makes suggestions on how the government could better address the primary concerns of the industry in areas like power supply, raw material processing and sensitization of the Nigeria populace towards appreciating and procuring locally made machines.

Keywords: Agro-Allied Industries, Agro-Allied Machinery, Policy Instability, Development, Raw Materials

1. Introduction

Most agricultural produce that is sold in formal markets requires post-harvest processing operations. The market for processing machines therefore is of significant economic importance and offers great opportunities for local companies which specialize in fabricating agro-allied machinery (both "pre" and "post" harvest machines) and their existence and operations is pivotal to the overall success of the country as a would-be industrialized nation. Machines fabricated by such companies include the cassava press, cassava grater, cassava chipper, maize sheller, plate mill, honey press, cassava sifter, hammer mill, multi-purpose grain thresher, de-stoners, dryers, planters, feed mill mixers, graders etc. Food processing is an integral part of agriculture as most farm produce must undergo one form of conversion or the other either for storage or breaking down into smaller, workable units as a food source or raw material.

Just as Nigeria is known for its yet largely unrealized potential for agricultural development and the positive welfare effects it would create for poor rural producers and urban consumers, an important condition for its future success is the creation of a suitable institutional environment that allow local industries to operate professionally

and thus boost the returns of the food and agro-allied sector; ensuring more export earnings for the country. It is pertinent to note that as the world is increasingly becoming a global village, there is a lot of competition from industrialized countries to use developing countries like Nigeria as a dumping ground for obsolete products (1,2,3). This negatively impacts local producers because most times, they cannot compete with these cheap give-aways. Hence, this study seeks to find feasible solutions that policy makers can adopt in support of the local producers of agro-allied machinery in this current environment.

The objectives of this study are:

- (i) To highlight the problems facing indigenous industries fabricating agro-allied equipment in Nigeria with a view to national development and,
- (ii) To suggest possible solutions that can effectively tackle these problems.

2. literature review

Until Nigeria attained independence in 1960, agriculture was the most important sector of the economy as it accounted for more than one-half of Gross Domestic Product and for more than three-quarters of export earnings (4,5). This shows how important this sector of the Nigerian economy was until it was neglected after the oil boom.

Political and institutional instability was another factor that affected the management and performance of Nigerian agricultural research institutes who were meant to be develop new and innovative ways of solving agro-related problems and pass the knowledge on to industries for adoption (6). The decline of agriculture in Nigeria also led to a general neglect of local agro-industries by investors and policy makers. The problem in public policy was the lack of long-term consistency and predictability. Successive government abandoned previous policy strategies and instead came up with completely new ones. Examples of previous agricultural policy strategies include policy initiatives related to Operation Feed the Nation of 1976, the Green Revolution of 1980, Directorate of Food, Roads and Rural Infrastructures in 1986, withdrawal of fertilizer subsidies in Mid 1990's and restoration of

fertilizer subsidies at 25% between 1999 and 2000 (6). Others include the Cassava Initiative in 2002 and the Seven Point Agenda of 2007.

With Nigeria's return to democracy in 1999, the Federal Government identified import dependence, reliance on a single commodity (crude oil), a weak industrial base, low level of agricultural production and a weak private sector as the major weaknesses of the Nigerian economy (7). As a result, the government made the development of the agricultural sector the highest priority both for poverty reduction and improvement of the economy. Also, new technology, improved seedlings, better storage facilities and access to funds at reduced lending rates were to be made readily available. It was also reported that the government would move the country away from being an export dependent country as all necessary incentives and encouragement will be given for the development of the agro-allied industries as contained under the Small and Medium-scale Enterprises (SME) act (7,8).

Foreign investors were not left out of the developmental strategies as the Federal Government of Nigeria invited foreign companies to come and help tackle the problems facing different sectors of the economy. For instance, the Federal Government encouraged certain Ukrainian firms to boost their investment in Nigeria's steel sector (9). Nigeria is a country rich in iron ore, the principal element in the making of steel products which in turn is a major raw material in the agro-allied machinery fabrication industry. Similar invitations had also been given to Russia and China.

As part of the efforts to encourage local production in the primary sector of Nigeria, the government also imposed a ban on a number of foreign goods which can be sourced in Nigeria e.g. poultry products, leather products, textiles, etc. Moreover, the Nigeria's National Cocoa Development Committee recommended a total ban on the importation of cocoa products into the country as part of measures to protect the local cocoa growing and processing industry (10). All these measures had varying impacts on local SME industries. The question however is, has the current efforts by the Nigerian federal government alleviated or compounded problem being faced by the agro-allied machine fabrication sub-sector of the Nigerian economy? In order to ascertain their current situation, a study was conducted on agro-allied machinery fabrication industries in Ibadan, the largest city in Nigeria and a major agricultural hub and trade route in western Africa.

3 Methodology

In carrying out this study, the following methods were used to get information from the target industry:

3.1 On Spot Assessment and Inspection

Visits were paid to the factory premises of selected companies for an "on the spot" assessment. Various divisions of the workshops were examined to inspect ma-

chines being produced in their cutting/fabrication, joining and finishing sections. In doing this, the physical conditions of the factory site and workshop were inspected including the working environment of the artisans and technicians employed at the factories. The problems that workers were having in each sub-division were also noted.

3.2 Personal Interviews

Interviews were conducted with people from all cadres and sections of the companies. This included the chairmen/managing directors, administrative director/accountant, factory foremen, heads of joining and finishing subdivision, fabrication sub-divisional heads, industrial training apprentices, etc. These were able to shed light on areas of enquiry.

4. Results and discussion

The findings reveal that even though there has been some level of improvement in some areas of operation in the industry, there still exist myriads of problems confronting these small and medium scale enterprises. For example, the ban on importation of poultry products (e.g. turkey, chicken and eggs) has gone a long way to help improve the operating environment for the agro-allied processing machine fabrication industry. According to respondents, the local producers of poultry products had to increase their production to meet the local demands, since consumers can no longer buy imported frozen turkey and chicken like before. With this need for increased production came a corresponding increase in demand for the fabrication of "Feed-mill mixers", a processing machine used in the production of animal feed and which can be easily produced locally by technicians in the agro-allied machinery fabrication industry.

As encouraging as this may be, findings revealed that the agro-allied machinery fabrication industry is still facing tough times due to the high costs of construction materials, unreliable power supply, lack of marketing skills, inadequate labour safety, neglect of waste disposal, low level of technology and indigenous product bias.

These problems are discussed in more detail in the following section.

4.1 Cost of Construction Materials:

The materials of construction being used in this industry ranges from angle iron bars, iron rods, steel plates, stainless steel plates, pulleys, vee-belts, bolts and nuts, electrodes, bearings, square pipes, flat bars etc. Because these are the main raw materials, their costs greatly influence the overall price of the fabricated machine. Table 1 shows current prices of some of these mostly imported raw materials. The prices quoted change in accordance with the exchange rates at the international market but generally they are all increasing.

Table 1: Prices of Some Raw Materials in the Nigerian Agro-Allied Industry (July 2010)

S/N	Raw Material	2008 Price in Naira	2010 Price (in Naira)	Equivalent Price in U.S. Dollars @ N150/Dollar
1	Gauge 20 black steel plate	3,500	4,800	32
2	Gauge 18 black steel plate	4,200	5,000	33.3
3	Gauge 16 black steel plate	5,800	6,500	43.3
4	Gauge 14 black steel plate	9,000	7,500	50
5	Gauge 20 stainless steel plate	25,000	32,000	213.3
6	Gauge 18 stainless steel plate	31,500	37,500	250
7	Gauge 16 stainless steel plate	34,500	40,500	270
8	Gauge 14 stainless steel plate	38,500	45,500	303.3
9	Gauge 20 galvanized steel plate	12,500	15,000	100
10	Gauge 18 galvanized steel plate	13,000	18,500	123.3
11	Gauge 16 galvanized steel plate	19,500	22,500	150
12	Gauge 14 galvanized steel plate	27,500	30,500	203.3
13	Stainless steel Electrode (1 pack)	9,500 (150 pieces in a pack)	12,000 (150 pieces in a pack)	80
14	Ordinary Electrode (1 pack)	1,150 (150 pieces in a pack)	1,600 (150 pieces in a pack)	10.7

4.2 Power Supply

These industries cannot exist without electricity. As a matter of fact, their very existence is based on electricity supply since basically; all their operations in machine fabrication require one form of electrical energy or the other. These include lathe machine operations; welding, grinding, power saw cutting, nibbler cutting, drilling, milling machine operations, etc. As is the case in Nigeria generally, power supply has been very erratic. This slows down production and most times, set targets are not met. As at the time of this study, some of the factories visited complained of having been without power supply for over 3 days while some others had been on generators for weeks.

Operating a fabricating factory like these on power supply from generating sets is costlier compared to power supply derivable from the National Grid (NEPA). This also adds to the overall cost of production and

ultimately the selling price of these machines as cost of maintaining and fuelling the generator also comes into consideration. This corroborates findings reported by other researchers on the on SMEs' and industrialization in Nigeria (11,12,13,14,15,16,17).

4.3 Restricted Market Base

Respondents made it known that most of the requests for machines come as a result of development programmes sponsored by big organizations like the United Nations Industrial Development Organization (UNIDO), International Institute of Tropical Agriculture (IITA) Ibadan, Federal and State Government projects after which there comes a fall in demand. Other sources are large scale farms with considerable hectares of land which are very few in Nigeria. This shows how restricted the market for these industries are since about 70% of agriculture in Nigeria is still on small scale or subsistence

levels. Moreover, many large scale companies which are into agri-business (cocoa processing, milk and milk products, fruit juice etc.) import most of their equipment from developed countries where quite a number of them have their roots. Moreover, because of the cost of production, the final cost of these machines is sometimes beyond the reach of individuals who may wish to acquire one. This affects marketability in the local and to some extent, the international arena knowing fully well that there are competitors mostly from Asian countries.

4.4 Waste Disposal

It was observed that waste disposal is a major problem even though workers at the factory did not mention this. Dumps for scrap metal, metal chips, used chrome cuttings etc. litter the factory premises. Dumps are located just outside the workshop where it is exposed to the forces of nature (air, water, rain etc). Since these materials are non-biodegradable, they constitute a nuisance to the environment. Had it been that these can be recycled or given back in exchange for money, the problems disposal would have been reduced.

4.5 Noise

Findings from this study also revealed that the technicians and artisans complained about noise levels they were exposed to during some of their operations. Noise arise from the various jobs being done by factory workers or usage of heavy equipment at the same time e.g. generator, grinding, chiselling, hammering, beating to shape, shaft threading etc. Noise levels depend on how many of these operations are carried out at the same time.

It was observed that different people respond differently to noise levels and even though, there was no scientific equipment readily available during the study for measuring the various decibels of sound the workers were exposed to, it was quite clear that the working environment will be a much better had it been that something could be done to check the effect of noise pollution on the workers.

4.6 Safety

Loss of lives or maiming was reported to be a frequent occurrence. The most common safety problems are the dangers of electrocution, paint fumes at the spraying section, flying metal chips and fatal accidents while working at the lathe machine. A technician at one of the factories visited was actually maimed by the lathe machine as he was working on it shortly before this study was conducted and he was certified unfit to work on the lathe machine again. In another factory, finishing work was being done on a set of cassava pressing machines at the painting section and the artisan working on it had to use cotton wool to cover his nostrils to minimize the volume of paint fumes being inhaled by him because of the serious respiratory/health problems that could arise from it. Most places visited had no first-aid-kit in place. Throughout the period of the study, it was observed that there was no government agency that inspects or ensures occupational safety and health standards for workers.

4.7 Level of Technology/Automation

Automation can be said to be at a discouraging low level in fabricating industries in Nigeria. Thus, the progress of work is slow as human factors greatly come into play in these situations. This also affects the finishing aspect of production as errors based on human judgements are sometimes very conspicuous.

4.8 Indigenous Product Bias

Some respondents complained that while marketing their machines, they often meet with a general indigenous product bias among the Nigerian populace as people prefer to go for imported machines rather than patronize the locally fabricated ones. This is because it is generally assumed that any Nigerian made product is fake or sub-standard and this creates an atmosphere of discouragement for the local producers. Also, this bias also results in an uneven competition in the market between the locally fabricated ones and the imported machines even though the locally fabricated ones could also be efficient in operation.

4.9 Policy Instability

All respondents re-iterated the fact that sudden policy changes seriously hinder the growth of their industry. For instance, the management of some factories visited made it known that during the Cassava Initiative in 2002, most of the machines demanded for then were cassava related (e.g. graters, chippers, presses etc). This clearly reflected the government policy on cassava and cassava products exportation then. However, that was no longer the case as the intense publicity of the initiative then has since given way to other policy issues when another administration came into power (18,19,20).

5.0 Conclusion and recommendations

From the facts gathered from this study, it is clear that the local agro-allied machinery fabrication industry in Nigeria has quite a number of problems confronting them. There is need to see this sector of the Nigerian economy as an upcoming and viable sub-sector of the SMEs' in Nigeria. As such, any problem confronting the sector should be seen as a problem confronting the nation as a whole. Should Nigeria develop in her indigenous technology to an appreciable level in terms of what is available in the international world, the country which is so blessed with both human and national resources can rise up and stand in a formidable position not only as an industrial giant in Africa, but also as a force to reckon with in the global market.

As a result of indigenous technological development and breakthroughs attributed to good operational environment created through favourable policies, a nation like India with an economy worse than Nigeria before can now boast of having a say in the technological world. This can also be the case in Nigeria should

proper focus and attention be given to this sector of the Nigerian economy.

In 1987, radio-active wastes were brought from Italy and dumped in a town known as Koko in the old Bendel state of Nigeria. This resulted in loss of lives even though the situation was arrested on time. Likewise, dumping of foreign goods and technology on Nigeria should be seen as being dangerous just like that of the Koko wastes saga as long as there are competent hands within the country to help in the area of technological development.

5.2 Recommendations

While the Federal Government of Nigeria might be commended for efforts aimed at resuscitating the ailing industry, the following recommendations if implemented will enhance the performance of agro- allied machinery fabrication industries in Nigeria:

- (i) Local producers should be encouraged and assisted as regards the cost of raw materials for their industries. If this is done the cost of production will be less and marketability will increase. Since the primary raw material used in producing these secondary raw materials are available in Nigeria, the government should find a way of reviving the relevant sectors of the economy involved in turning these primary raw materials into their secondary forms (e.g. iron ore into steel products). These include the Osogbo Machine Tools and Ajaokuta Steel Rolling Mills.
- (ii) A more conducive environment should be created for the local industries by enacting policies that will ban the importation of products or machines that may stifle or choke the local fabricating industries as was done in the case of poultry products for example.
- (iii) Electricity supply should be improved till it becomes not just more regular but stable.
- (iv) Petroleum products should be made available in abundance at all times as there will always be need for it in terms of power generation as well as transportation of raw materials and finished products. Since Nigeria is rich in crude oil, efforts should be made at reviving and building more refineries in the country.
- (v) The Nigerian populace should be sensitized to be more positively disposed to Nigerian products as this will help in its development as this will eventually help the local industries to grow.
- (vi) Safety measures should be ensured and enforced at local industries to minimize the industrial hazards occurring in the industry. Monitoring agencies should be created to effect in a way similar to what is obtainable in some other countries e.g. the Occupational Safety and Health Administration (OSHA) in the United States of America.

- (vii) Ear-muffs and gas masks should be provided where and when necessary by employers of labour at the industries to reduce the effects of noise pollution and health problems respectively.
- (viii) Increased effort should be made at improving waste disposal methods in the industries. This is because of the non-biodegradable nature of the raw materials (mostly metals) being utilized by the sector. Relevant professionals should be contacted for the possibility of recycling. Laws should also be formulated to enforce compliance by industries to environmental rules.
- (ix) Instability of government policies is an important issue which should be properly addressed as it is vital to the survival of this sector of the economy. A very recent example is the issue of the Cassava Initiative of the immediate past administration but which is no longer the being projected as before because another agenda has come up to replace it.

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