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"EMPLOYMENT CREATION AND OPPORTUNITIES IN THE MANUFACTURING SUB-SECTOR: THE CASE FOR THE MANUFACTURING OF COTTON, TEXTILE IN NIGERIA".



Dr. Goddy Nkem Onuoha

BY

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sawdust, planer shavings, plywood and veneer trim). The ball is processed in a ginnery where the seed is separated from the ball to obtain lint which is baled and serves as the raw material for the cotton textile industry. The seed is processed and the kernel separated from the husk; which is useful as cattle feed. The kernel is then processed to yield cottonseed oil and linters. Linters are used for padding in furniture and automobiles. They are also used in the manufacture of cellulose products such as rayon and lacquers. After oil is extracted from the kernel, cake is the residue, which is very rich in protein. The cake is deployed, as feed for animals while its by-product "foots", is fatty acid used for industrial products. The process diagram below indicates the diverse and divers uses of the cotton plant.

The textile mill and products industry comprise establishments that produce yarn, thread and fabric and also a wide variety of textile products for use by individuals and businesses but not including apparels. The process of converting raw fibers into finished non-apparel textile products is complex. Textile mills take natural and synthetic fibers, transform them into yarn, threads or webbing. To produce spun yarn, natural fibers must first be

processed to remove impurities and give products the desired texture and durability as well as other characteristics. After the initial cleaning stage the fibers are spun into yarn. Fabric and textiles are produced by means of weaving, knitting and tufting. In weaving mills, looms are used to transform yarns into cloth. Looms weave or interlace two yarns, so they cross each other at right angles to form fabric. Modern looms are complex automated machinery. At anytime during the production process, a number of processes called finishing may be performed on the fabric. These processes include dyeing, bleaching and washing among others. Finishing encompasses chemical or mechanical treatment performed on yarns or fabric to improve appearance, texture or performance.

A complete textile manufacturing facility or industry is like a limousine. There can only be more expensive ones. By their nature, there are no cheap limousines. A specialized mill is more approximate to a sedan. It is more affordable than a limousine. A textile manufacturing industry is an assemblage of machines, materials and men. Such a factory is capable of processing several different

PREAMBLE

Nigeria is the third largest producer of cotton in Africa after Egypt and Sudan. Cotton growing zones are mainly in the Northern parts of the country, though the planting of cotton started in Western Nigeria. Like the palm oil tree, cotton is another agricultural product that is completely utilizable as will be evident soon. When cotton is harvested, the yield includes the stalk and the ball. Both in fashion and the accompanying fad, it is the ball that is considered useful. The stalk is generally burnt or otherwise disposed of in a manner to suggest that it is an undesirable by-product of the harvest and utilization of cotton. Recently, it has been demonstrated that the stalk is a useful source of raw material for the manufacture of medium density fiber board (MDF). It is also cheaper than other popular raw materials that are used for the manufacture of MDF. These include hardwood and softwood mill waste (chips,

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raw materials including vegetable, animal and synthetic fibers but in the discourse below attention is focused on cotton as the raw material. It is necessary to indicate at once that the target market for the industry in question is both domestic and foreign. Therefore product quality is expected to be high. This can be achieved by incorporating open-end or turbine spinning, which combines drawing, roving, lapping and spinning into one operation.

1. THE MANUFACTURE OF COTTON, TEXTILE IN NIGERIA

There are about 132 textile mills in Nigeria most of which employ less than a hundred workers. Annual domestic manufacture of cotton textiles is about 376 million square meters. The average price of cotton as at 1995 was N40,972:00 per Tonne. The output of the spinning/weaving industry in 1995 was N1.014 Trillion, with industrial costs of N0.345 Trillion yielding a value added of N0.67 Trillion. Cost factors include raw cotton, wages and salaries, dyestuff and chemicals. The emphasis in the textile industry has continued to shift from mass production to flexible manufacturing. So some mills should aim at supplying customized markets. In view of this, in future if not immediately, effort should be made to create incentives that will make it attractive for entrepreneurs to invest in specialized operations such as spinning or weaving only but feed the mills

that could concentrate on printing and finishing. This will increase the value added in the industry.

2. SOURCES OF MATERIAL AVAILABLE

Cotton is grown in three zones of the Northern Nigeria. These are the Northern, Eastern and Southern zones. The Northern zone comprises the former Kano, Sokoto, Katsina, Zaria and Plateau provinces. The Eastern zone includes the Borno, Bauchi, Sardauna and Adamawa provinces while the Southern zone comprises Kabba, Benue, Southern Niger and Southern Illorin provinces. The annual average output of cotton in Nigeria between 1990 and 1995 averaged 189,000Tonnes. The internal consumption of cotton within this period was about 400,000 bales or 72,560Tonnes per annum. The weaving capacity in Nigeria exceeds the spinning capacity with the result that many textile mills engaged in weaving depend of imported yarns. The cost of importation of textile yarn thread exceeds N0.164 Trillion annually. At the same time, about one third or 63,000Tonnes of the locally produced cotton is exported. Therefore there is the need to add value to the raw cotton by increasing the spinning capacity in the cotton textile mills. In the domestic textile manufacturing industry, the cost of raw material ranges between 50 - 70 percent of the cost of the product. The value added during processing of the raw cotton to yarn is about 50 percent. So if spinning capacity is increased enough for the raw

cotton that is presently exported to be processed locally, the added value to the economy will be a minimum of N1.29 Trillion. This will have a salubrious effect on both the textile industry and the Nigerian economy. Employment generation will increase and the excess quantity of the yarn thus manufactured could be exported to earn further revenue. On the basis of the foregoing, while considering the cotton textile manufacturing industry, the temptation is to incline positively to the expansion of the spinning arm of the industry in order to take advantage of the available raw materials. Howbeit, the proposal hereafter outlined spans the entire processes of spinning, weaving and finishing.

3. THE EQUIPMENT REQUIRED

We will discuss the equipment necessary for setting up a cotton textile manufacturing industry from the point of view of the processes or necessary operations rather than that of individual items of machinery. It is expedient that we do this because of the flexibility in the equipment requirement for this industry. The kind and quality of the finished products desired influence the variation in the machinery employed. The necessary operations required to convert raw cotton to finished textile products include opening, blending, carding, combing, roving, spinning, weaving, dyeing, printing, finishing and packaging. The equipment required includes the following:

Textile

1. Complete blow room machines
2. Carding machine
3. Combing machine
4. Open-End spinning machine

Preparation

1. Warping machine
2. Singeing machine

Weaving

1. Weaving machine (Fluid Jet Loom)

Dyeing

1. Dry dyeing machine
2. Steam/padding machine

Printing

1. Complete printing machine

Finishing**Quality Control**

Complete Laboratory

In order to make meaning of this manufacturing plant, we shall specify the desired production range as Ne 5 to Ne 30 where the target capacity is restricted to Ne 16 or 7.5Tonnes per day. For this purpose, we may now be more specific with the equipment specifications.

Blow room

1 automatic bale opener, 10m length, 1 multi-mixer with 6 compartments, 1 opener and beating point, 1 fine opener

Carding

8 carding machines with flock feeder with can changer

Drawing

2 draw frames, double head type (first passage)
2 draw frames, double head type with auto leveler (second

passage)

Combing

2 lap formers, 7 combing machines with auto can doffing, 1 automatic lap transport system.

Roving

8 roving frames with automatic doffer and overhead cleaner linked to 13 winding machines

Spinning

4 open-end spinning machines with waxing device

Weaving

10 no. Ultra High Speed Water Jet Looms

Dyeing

1 Soft Flow Jet Dyeing Machine

Printing

1 Rotary type printing machine with eight color capability

Washing

1 continuous-washing-machine (perforated drum washing machine), with perforated drums and squeezers, including closed scouring sections; fabric feeding delivery; and effluent heat exchangers suitable for pre-washing of raw fabric, light weaving fabrics as well as post-washing and post-bleaching of fabric

Finishing

1 finishing machine, oil-fired, fully computerized, complete with controller and heat recovery unit

4. MANPOWER

The manpower is distributed under different

departments. These are Management, Administration, Maintenance, Production, Professional, Material Handling, Sales and Services and Utilities. They range from managers to casual laborers. The various job descriptions include but are not limited to industrial machinery mechanics, general maintenance and repair workers, maintenance workers-machinery, front-line supervisors. Printing machine operators, textile machine setters, operators and tenders, bleaching/dyeing machine operators, cutting machine setters operators and tenders, winding machine setters, operators and tenders, helpers for production workers, laborers and freight, stock and material movers, packers and packagers and office clerks.

Production

Production workers, which include front-line managers and supervisors spend most of their sift time on the production floor. They account for about 60% of the total staff.

Machine setters

This is the largest group. They thread yarn through guide needles or rollers

Extruding machine operators

They load chemicals or pulp into machines and adjust the controls for proper tension, speed and heat.

Installation, Maintenance and Repair

This group inspects the machines to make sure they

are working properly and also carry out the necessary repair operations. They constitute about 2% of the workforce.

Engineers and Technicians

They account for about 1 % of the workers. These are drawn the ranks of Textile, Mechanical and Industrial engineers.

Skilled products operators

These include quality control inspectors who use precision measuring instruments and complex testing equipment to detect product defect, wear or deviations from specification

5. THE LAND SPACE REQUIRED

The land space required is about thirty six hectares. This allows for installation of further trains when expansion is desired in the future.

7. PROFITABILITY OF THE BUSINESS

The value added in a gross output of about sixty small textile mills with a gross output of N1.014 Trillion is N0.670 Trillion. This means that the business is profitable. On the face value, the cost of setting up a textile manufacturing is high. But it had been made clear that it is simpler, cheaper and more profitable to set up a small high quality yarn spinning industry.

This approximates the sedan mentioned earlier on and is more suitable to one aspiring to become an entrepreneur.



6. THE CAPITAL OUTLAY

Project cost

Item Cost (Naira)

	N	K
Land p/s	8,460,000	00
Land development p/s	1,200,000	00
60Tonne Weighbridge p/s	4,230,000	00
Buildings (Administration, Logistics, Marketing, Production, etc)	32,890,000	00
Water supply (City mains, borehole, structural steel tank, treatment facility)	4,200,000	00
Public power supply (11 KV power line extension to premises 250 KVA transformer)	3,890,000	00
Private power supply (Two unit 250KVA generators, Control panel, Fuel storage tank)	10,200,000	00
Machinery & Equipment	1,050,000,000	00
Transport (Fork Lift, Trucks, Vehicles)	135,000,000	00
Maintenance equipment and tools	12,000,000	00
Installation & Commissioning	27,800,000	00
Insurance	8,300,000	00
Clearing, Transportation and Handling	12,000,000	00
Engineering Fees	51,300,000	00
General Contingency	103,000,000	00
TOTAL	1,413,170,000	00