

Prospects of Small-Scale Cotton Production in some selected Local Government Areas' of Niger State, Nigeria and Its Roles on Revitalization and Reawakening of Rural Economy

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Abstract

The study examined the prospects of small-scale Cotton production in some selected local government areas' of Niger State, Nigeria and its implication on revitalization and reawakening of rural economy where cotton is predominantly grown. A total of one hundred and twenty farmers were sampled using multi-stage sampling techniques. Pre-tested questionnaires were used to elicit informations for the study. Data collected were analyzed using descriptive (mean), budgeting technique and inferential statistics. Average household size was 7.04 which is fair considering the benchmark given by FAO; mean age of 45 years with 15.4 years of experience in cotton production indicates that they are young and energetic people with lot of experience; majority of them were without formal education, which implies that they were largely illiterate farmers; males dominate cotton production than females in the area given the ethno-religious nature of the study area. Majority were small scale farmers given the average farm size in the study area (1.4hactres). Majority had no access to credit facilities with little or no extension contact (0.09). Results indicates mean gross margin of ₦15,320.00, mean net farm income of ₦13,330.00 and net return on investment of 0.27, implying that cotton production is profitable in the study area even though the profit stream is low. Virtually all the problems highlighted were serious constraints. These estimates indicate the need for intervention by relevant stakeholders in the burgeoning cotton business in Niger state. Profitability could be increased by tailoring policies towards migrating from its subsistence nature to commercial sector by provision of adequate infrastructure, cheap and available credit facilities and expansion of extension services.

Keywords: Prospects; small-scale; cotton production; economy; Niger state; Nigeria

Introduction

Cotton (*Gossypium sp.*) is one of the most important vegetable fibres used in textiles and it plays a very great role in international trade with its exact origin is not known (Daniel *et al.*, 2010). Cooper (1990) said it might have its origin in central and South

America. The increase in the world cotton production in the 1970s and 1980s has been reported by Yudelma *et al* (1998) as a result of expansion in the use of pesticides, field trials revealed that 50% of the yield of cotton will be lost if not sprayed.

In Nigeria, prior to oil boom cotton was one of the main source of foreign exchange earner and second largest employer of labour after the public sector (Daniel *et al.*, 2010). Since the inception of the Nigerian cotton board (NCB) in mid 70s it has been observed that cotton production has fallen to a very high level, thereby endangering the future of the Nigerian textile industries and causing an un-necessary drain on the country's foreign exchange following the law establishing structural Adjustment Programme (SAP) in the Nigerian economy and the scrapping of the commodity board by the federal military Government in the mid eighties. The peak period of cotton production in Nigeria was as far back as 1976/77 when about 453,126 bales (183.43kg/bale) were produced (Olukosi and Isitor, 1990). Thereafter production started declining due to price fluctuation, pest infestation and other related problems. By 1983/84 only 69,000 bales was produced while the demand for lint that year was about 531,000 bales which might have been satisfied through importation at the expense of foreign reserves (Olukosi and Isitor, 1990). A further study reveals a glaring disparity between cotton production and consumption (Gusau, 1989).

Cotton production in Nigeria is still in the hands of small scale farmers whose average farm size is about 0.5ha and about 0.8 million farmers are growing the crop on an estimated total area of 6 – 700,000ha (Olukosi *et al.*, 2008). The farmers average output is still low as reported by USDA (1994), because cultivation is still done mostly with hand tools such as hoes, animal drawn implements and also tractors. Despite their distinctive and critical position, small farmers belong to the poorest sector of population and therefore cannot invest on their farm. The vicious cycle of poverty has led to the unimpressive performance of the agricultural sector. Priority is given to foods crops which results to late planting of cotton, with minimal application of fertilizer

and insecticides which give a minimum output of about 300kg/ha. The decline in the cotton production and other related commercial crops lead to the establishment of Raw Materials Research Development Council (RMRDC) by Federal Ministry of Science and Technology. The council was mandated to work out the modalities to improve on the output of specific crops which cotton was one. In Niger state, cotton is been produced with little or no government attention to encourage increased production.

Despite the declining trend of cotton share in textile fibres since 1970s, cotton still remains the most important natural fibre of the 20th century and it represent 38% of the fibre market in early 2000s (Horton and Mackay, 2003). In view of its widespread forward and backward linkages, the cotton crop occupies a unique position in the rural economy of Nigeria. Its performance holds the key not only for the growth and development of agriculture sector but also for the healthy growth in the overall economy. However, still there is huge potential to increase overall cotton production. Therefore, to increase cotton productivity, sound macro and micro-economic farm policies are needed. This paper tries to provide some useful information in policies towards increasing cotton production.

Research methodology

The study area is Niger State of Nigeria. The State is located in North-central Nigeria between Latitudes 8°20'N and 11°30' N and Longitudes 3°30' E and 7°20'E with a total land area of 76,363 square kilometres and a population of 4,082,558 people (Wikipedia, 2008). Annual rainfall is between 1100mm and 1600mm with average monthly temperature hovering around 23°C to 37°C (NSADP, 1994). The range of local climatic and soil conditions, resource availability, and markets allows favourable fish farming practices.

This study was conducted in Niger state, Nigeria and made use of both primary and secondary data. The main instrument for eliciting the primary data was structured questionnaires. Information were collected on input and output in cotton farming and socio-economic characteristics of cotton farmers through personal interview. Primary data were supplemented with secondary data such as journals, books and publications. A multi-stage sampling technique was used to select a total sample size of 120 farmers from the sampling frame obtained from Associations of Cotton farmers. Firstly, all cotton producing area were purposively selected (Rafi, Mariga, Magama, Borgu, Rijau, Agwara LGAs' respectively), then proportionate representative sampling size for each LGA's were determined, lastly simple random selection of respondents from each LGA's. Data analysis was done using descriptive and inferential statistics.

Empirical model

The specific type of budgeting technique used was the gross margin analysis as well as the Net Farm Income. The model is stated thus:

$$GM = GI - TVC \dots\dots\dots(1)$$

Where:

GM = Gross Margin

GI = Gross Income

TVC = Total Variable Cost

$$NFI = GM - TFC \dots\dots\dots(2)$$

Where:

NFI = Net Farm Income

GM = Gross Margin

TFC = Total Fixed Cost

Results and discussion

Socio-economic Characteristics of the Respondents: Results in Table 1 showed that average family size was 7.04 which is fair considering the benchmark given by FAO. Besides, the mean age of farmers was 45 years with 15.4 years of experience in cotton production. This indicates that they

are young and energetic people with lot of experience. The respondents educational level (0.30/36%) showed that majority of them had no formal education, which implies that they were largely illiterate farmers. The mean value for gender (0.85/102%) indicated that males dominate cotton production than females in the area. This is not a surprising outcome given the ethno-religious nature of the study area. Most of the respondents were small scale farmers given the average farm size in the study area (1.4hectares). Majority of the respondents had no access to credit facilities judging from the mean value (0.10/12%) and there is little or no extension contact (0.20/24%). This is not a surprising outcome since it is not among the cash crops receive greater attention in the state, thus, little or no effort to encourage increased production.

Table 1: Socio-economic characteristics of the respondents

Variables	Mean
Family size (number)	7.04
Age (years)	45
Experience (years)	15.4
Education (formal=1, otherwise=0)	0.30
Gender (male=1, otherwise=0)	0.85
Farm size (hectares)	1.4
Access to credit (yes=1, otherwise=0)	0.10
Extension contact (yes=1, otherwise=0)	0.20

Source: Field survey, 2012

Cost and Returns in Cotton Production:

An estimated net income per hectare per annum was analysed. Olukosi and Erhabor (2008) stated that gross margin analysis enables the estimation of the total expenses (costs) as well as various receipts (revenue or returns) within the production period. Table 2, revealed that farmers incurred an average variable cost of ₦44,380.00 per hectare; an average total costs of ₦49,170.00 and an average estimated returns of ₦62,500.00 per hectare. This implies that the farmers made a gross margin of ₦15,

320.00 per hectare and a profit of ₦13,330.00 per hectare. The farm Gross Ratio (GR) was 0.79 and an operating ratio of 0.75 which showed that 79% of the gross income was accounted for by total cost. A ratio less than 1 is always desirable for any farm business. The lower the ratio the higher the returns on naira invested (Olukosi and Erhabo, 2008). In addition, net returns on investment was 0.27 for the farmers, indicating that they returned on the average ₦0.27 for every ₦1.00 naira invested in the business, thus further confirming the profitability of fish production in the study area. Production efficiency index (1.27) per hectare indicates that returns exceed cost by 27% which adjudged the profitability of the enterprise in the study area. The farmers are therefore encouraged to continue in the business because it is profitable.

Table 2: Costs and Return structure per hectare

Costs items	Cost (₦)
Variables	
Labour	10,350.00
Seeds	5,600.00
Fertilizer	14,000.00
Chemicals	3,200.00
Transportation	11,230.00
Total variable costs	44380.00
Rent paid on land	2,800.00
Depreciation on capital items	1,240.00
Interest charge on loans	750.00
Total fixed expenses	4790.00
Total farm expenses	49,170.00
Returns	
Gross income/ha	62,500.00
Gross margin/ha	18,120.00
Net farm income/ha	13,330.00
PE=ATR/ATC	1.27
Percent profit	27
Gross ratio	0.79
Gross operating ratio	0.71
Return on naira invested	0.27

Source: Field survey, 2012

Constraints to Cotton production:

Cotton farmers encountered many problems during the production process. These problems include insufficient credit; scarcity of quality seeds, high input cost; insect/pest attack; input adulteration; marketing problem; lack of access to advance technologies; lack of awareness about good agricultural practices. Analysis of the problems was done by means of a three point Likert Scale that produced a critical mean of 2.0 and the results of the analysis are shown in Table 3. Virtually all the problems identified were indicated to be very serious. Scarcity of good quality seed was indicted by the respondents as the most serious constraint in cotton production with mean scale of 3.0. This situation was not surprising because both the seed and lint are sold together given unique nature of the product, with the ginnery selling the seed to oil mills after separation their leaving the farmers with the problem of scarcity. Since after the scrapping of cotton board who made provision of quality seed, this problem continue to persist. This study suggests legislation by the government that will regulate the sales of cotton seed by the ginnery since they are mostly concerned about short run profit. The second serious problem was marketing (2.7). Closure of most of the textile industries in the country exacerbated this problem, as a matter of concern government should immediately reopen these industries and should also improve power supply in order to ensure sustainability of these industries. Insufficient credit had a mean score of 2.5 and ranked the third serious problem encountered by the respondents. Less attention by the state government contributed to this problem, as such since the environmental condition in the state favours cultivation of the crop irrespective of been produced by few area, the state should take the advantage of harness this product to its peak, thus increase in its revenue. Lack of access to advance technologies and lack of awareness

about good agricultural practices were identified to be 4th and 6th serious problems respectively. This study suggests increased extension services attention towards this sub-sector. The fifth serious constraint is the problem of insect/pest attack; high input cost was identified as the least most serious problem (2.0), while input adulteration was identified to be moderate constraint faced by the framers (2.0).

Table 3: Problems of Cotton production

Variables	Mean	Ranking
Problem of insufficient credit	2.5	3
Problem High input costs	2.1	7
Problem of good quality seed (high yielding)	3.0	1
Problem of insect/pest attack	2.3	5
Problem of input adulteration	2.0	8
Marketing problem	2.7	2
Problem of access to advance technologies	2.4	4
Problem of awareness about good agricultural practices	2.2	6

Source: Field survey, 2012

Conclusion and recommendations

From the discussion above, it was concluded that there was a dire need to come to the rescue of these sub-sector which will help not only in enhancing cotton productivity and profitability but will also improve the living standards of the small farmers. The study showed that cotton production is a profitable venture in the study area. The market for cotton also is different from other food crops and is prone to price fluctuations. The following recommendations are

therefore proffered based on the findings of this work:

The market of cotton which has been left to market forces should be revisited by the government, that is, government agencies should be involved in declaration of market price based on average cost of production for each season.

Legislation that will regulate the sales of cotton seed by ginnery to oil mill industry should be enacted thereby reducing incidence of seed scarcity.

Extension workers should intensify campaign to farmers because it is a viable cash crop which require so much awareness especially the genuine marketers.

Farmers should be assisted by providing them with subsidised inputs such as chemicals and fertilisers either from the NGOs or from the government since subsidized credit facilities to small farmers may catalyze this process.

High yielding, pest and diseases resistant cotton seed varieties should be introduced to our environment accordingly to minimise the use of chemicals that are costly.

To achieve all these effective agricultural policies with strong implementation and follow up by government and other stakeholders is imperative.

References

- Cooper, E.I. (1990). Agriscience: Fundamentals and Application. Pp 46-54, Peter Publisher Inc., Ibadan, Nigeria.
- Daniel, J.D, Sanda, A.A and Adebayo, E.F (2010). Net Income Analysis and Efficiency of Resource use among Cotton Farmers in the Southern Part of Adamawa State, Nigeria. Agriculture and Biology Journal of North America, 1(6): 1215-1222.
- Gusau, A.J. (1989). Problem Associated with the Production and Marketing of Cotton in Nigeria. In: Proc. First Symp. Cotton Production, 5-7TH May, 1982. Held at the Institute for Agricultural

- Research, Ahmadu Bello University, Zaria, Nigeria.
- Horton, D. and Mackay, R. (2003). Using Evaluation to Enhance Institutional Learning and Change: Recent Experiences with Agricultural Research and Development. *Agric. Sys.*, 78: 127-142.
- Olukosi, J.O. and Isifor, S.U. (1990). Introduction to Agricultural Marketing and Prices: living Bookshop Series Gu Publications, Abuja, FCT pp 1 -67.
- Olukosi, J.O., Isitor, S.U. and Ode, M.O. (2008). Introduction to Agricultural Marketing and Prices: Principles and Application. Living Bookshop Series Gu Publications, Abuja, FCT pp 78 – 85.
- Olukosi, J.O. and Erhabor, P.O. (2008). Introduction to Farm Management Economics: Principles and Application. AGITAB Publisher, Zaria.
- RMRDC (2008). Report on survey of Selected Agricultural Raw Materials in Nigeria. Federal Ministry of Agriculture Abuja, Nigeria.
- USDA (1994). Cotton World Market and Trade US Department of Agricultural Series Circular Series FEc C –54: In Onu, J.I. and Adebayo, E.F (eds) Economics of Sole Cotton Production in Adamawa and Gombe Staes of Nigeria; Proceedings of the Conference on the Revitalisation of Agriculture in National Economy Federal University of Technology, Yola pp 157 – 160.
- Yudelma, M., Ratta, A. and Nygara, D. (1998). “Pest Management and Food Production” Look into the Future 2020 Discussion Paper 25 Washington DC IFRI.