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Full Length Research Paper

Assessment of the prospects of value addition among small-scale rural enterprises in Nigeria: Evidence from North-eastern Adamawa State

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The evaluation of the prospects of value addition in small-scale rural enterprises in North-eastern Adamawa State, Nigeria, was conducted in order to determine the profit potentials among the entrepreneurs. Data gathered through group discussions and interviews schedule with members/owners of enterprises in the communities were analysed using descriptive statistics and value-addition model. Results revealed that, majority (60.00%) of the small-scale entrepreneurs were males who were within the age range of 18 to 40 years (56.67%) with most (60.00%) having formal education ranging from primary to tertiary. While in the grain processing category groundnuts and maize were found to have highest margin of value addition with N3, 855 and N3, 225, respectively, fish processing recorded N220 as the most profitable in the livestock category. Hot pepper and tomato processing accounted for N2,180 each, as possessing the highest profit margin among the vegetable processors. The rural entrepreneurs reported inadequacy of markets for finished products (100.00%), limited capital for purchase of inputs (100.00%) and exploitative tax by government agencies (83.33%) as the most worrisome. It could therefore, be concluded that amidst the stated constraints, value addition on agriculture commodities in the area studied was found to possess high profit potentials. The study recommends that, small-scale farmers should be informed of the benefits of adding value to their agricultural commodities before marketing, and agencies that intend to encourage rural entrepreneurship should provide market and micro-finance linkages with absolute monitoring structures in order that beneficiaries adhere to appropriate agribusiness practices.

Key words: Community, enterprises, Nigeria, small-scale, value-addition.

INTRODUCTION

The concept of value addition in agriculture in the developing economies is widely becoming an acceptable strategy adopted by both government and non-governmental organisations towards improving the income generation of the rural communities. The former trend in which rural farmers disposed-off their farms produce without processing seemed to drastically reduce the incomes realisable through such transactions. The practice further impoverished the farmers at the instance of the middlemen, as most of them could not raise enough capital to carter for or re-engage in the next cropping season. This is coupled with the technological advancement and intensifying global competition in the agricultural industry which is fast transforming from the production of low quality bulk commodities sold in undefined markets to production of improved variety crops sold in specialised markets. Dunlap (2006) summed up the essence in a sentence: Apart from

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improving the profit potentials of participants (farmers), value-addition in agriculture offers entrepreneurial farmers an opportunity to identify and pursue new crops and new markets.

Silva (2002) and Boland (2009) explained value-added agriculture to mean the process of increasing the economic value and consumer appeal of an agricultural commodity. It is an alternative production and marketing strategy requiring the understanding of food safety issues taking cognisance of the consumer preferences. Similar opinion expressed by Cowan (2002) simply puts value-added agriculture as a phrase that expresses the difference between the value of agricultural goods sold and the cost of inputs used in producing them. In all the definitions, the authors agreed that, the agricultural crops must undergo a process through which these commodities are transformed from a lower quality to a superior one, thereby attracting economic value.

As the main paradigm shift of the most international donor agencies/projects is to devise and implement policies that will move the teeming farmers from the subsistence to semi-commercial or commercial agriculture through value addition of farm produce (TAHRCA, 2005; Tijjani, 2009; Johnstonebk, 2010), the evaluation of the present state of the rural small-scale enterprises with the absolute aim of determining the prospects became imperative. Tijjani (2009) reported similar focus of the Fadama III programme in Nigeria, mainly targeting the majority of farming population beneficiaries of 2.2 million rural households composed of about 16 million household members. If this trend is to be maintained, then most rural areas will experience development not only in terms of capacity building but structurally as well. This report, the assessment of the prospects of value addition among small-scale rural enterprises in Nigeria: Evidence from North-Eastern Adamawa State**,** is to ensure conformity with this laudable objective.

METHODOLOGY

The surveyed area

The survey was conducted in Madagali, Maiha, Michika, Mubi-North and Mubi-South Local Government Areas (LGAs) of Adamawa State, Nigeria, believed to have highly enterprising young people that engage in petty trading and high propensity of organising small-scale businesses, being on the international border with the Federal Republic of Cameroon.

Sampling and data collection

A simple random sampling method was used in selecting six (6) small-scale enterprises from a list of enterprises. These same types of small-scale enterprises were replicated in the rest (4) of the LGAs (that is, 24 small-scale enterprises) in order to determine a mean for the whole zone. Thus, making a total of 30 enterprises used in the study. Data were collected through group discussions with members, and making references to their records where necessary. Information sought includes all enterprise production, processing and marketing costs, among others. A cost-route was adopted in sourcing the data in the month of October, 2010.

Table 1. Selected socio-economic variables of the respondents.

Criterion	Frequency	Percentage
Age in range (years)		
Less than 18	01	3.33
18–40	17	56.67
41 and above	12	40.00
Total	30	100.00
Gender		
Male	18	60.00
Female	12	40.00
Total	30	100.00
Level of education		
No formal education	12	40.00
Primary education	09	30.00
Secondary education	07	23.33
Tertiary education	02	6.67
Total	30	100.00

Source**:** Computed from field data (2010).

Data analytical technique

Cowan (2002) stated that, in order to determine value-addition of agriculture commodities, the difference between the value of sold products and the inputs used in producing the products must be captured. Based on the aforesaid, the authors conceptualised a model as stated shortly, employing a 'comparative market price analyses' to achieve result. Thus:

$$E = (C + D) - (A + B) \quad \ldots\ldots (1)$$

Where:

E = is the added value of the agricultural commodity
C = is the value of by-product(s)
D = is the value of the commodity after processing (product)
A = is the value of agricultural commodity before processing
B = is the cost incurred on processing of commodity

RESULTS AND DISCUSSION

Selected socio-economic variables of the respondents

Table 1 indicates some selected socio-economic variables of the respondents. These are the age, gender and level of education attainment of the processors. They

Table 2. Type of enterprise and margin of value addition per unit product (grains) n: 30.

Type of enterprise	(A) Value of product before processing (N)	(B) Cost of processing (N)	(C) Value of by-product(N)	(D) Value of product after processing (N)	(E) Value added per unit (N) (C+D)-(A+B)
Groundnut processing	10,000/bag	2,470	16,325	-	3,855
Rice processing					
(i) *Parboil*	4,100/bag	1,275	450	6,500	1,575
(ii) *White/Fresh*	4,100/bag	275	450	5,100	1,175
Maize processing	4,350/bag	725	1,300	7,000	3,225

*Values used are means; note: N153 = US$1; Source: Computed from field data (2010).

were included in the study due to the relevance. It could be seen that most (96.67%) of the processors were adults with a very negligible (3.33%) percentage as teenagers. This result is an indication that, the aspect of value addition of agriculture commodity was an adult venture in the north-eastern parts of Adamawa State. Among the adults, the age group of 18 to 40 years accounted for the majority (56.67%). This age group is considered by most studies (Ja'afar-Furo, 2006/2007; Daniel et al., 2009) to take part in even the production aspect.

Gender wise, the males formed the bulk (60.00%) of the processors. The females were about 40.00% of the respondents. The domination of the male folks could not be unconnected with their economic status. As females have been confirmed in various studies (Starrels et al., 1994; Eboiyehi, 2006; Fodor, 2006; Joda, 2010) to be placed at the disadvantaged sides both in terms of financial and educational status, although they do more of the food production, their position in the pursuit for many economic empowerment ventures seems to be lagging. The result of this study is another confirmation. Table 1 also shows the educational attainment of the processors. It could be observed that up to 60.00% of the respondents have had primary, secondary or tertiary education, implying that the sector was dominated by enlightened persons in the communities. Further investigation revealed that, those (40.00%) respondents without formal education were females that engaged in fish processing. This finding further confirmed the reports of Nwosu (2008); which goes to show how females are relegated to the background in terms of acquiring of education.

Type of enterprise and margin of value addition per unit product (grains)

The result in Table 2 shows three (3) types of enterprise that are involved in processing of three (3) different grains which include; groundnuts, rice and maize. Of the enterprises, groundnuts processing accounted for the highest (N3855) value added per unit product (per bag). This was followed by maize (N3225), parboil rice (N1575) and white/fresh rice (N1175). The groundnut processors buy bags of the produce and processed same into oil and cake as by-products using machine processor and manual method. The oil was then put into 20 L jerry-cans and sold in the local markets to individual consumers. In some instances, retailers buy from the processors and resale in smaller containers such as 4 L gallons and ^{1}/2 L bottles. For the groundnut cake, it is packaged in 50 kg bags and sold to livestock rearers as feeds and in some cases, market women buy and bake into cakes as edible.

Rice was processed into two (2) products namely parboil and fresh or white rice. Both the products (parboil and fresh rice) and by-product (rice bran) were put into 100 kg bags and sold to local buyers who use as food and livestock feeds, respectively. Maize processors buy the produce in 100 kg bags and de-husk same using machines. The grains were then milled into flour and put into same 100 kg bags and disposed-off in the local markets. The by-product (maize bran) were then bagged in same 100 kg sacks and sold to the livestock rearers as feeds.

Type of enterprise and margin of value addition per unit product (livestock)

There are two (2) types of processing (roasting and smoking) units captured in this category. They include poultry (roasting) and fish (smoking). The former was further divided into spent layers, layers, broilers and cockerels. The fish processing involved only the catfish. The result in Table 3 indicates that, fish processing had the major (N220) value addition per unit product as against broilers, layers, spent layers and cockerels which had N195, N170, N140 and N140, respectively. The poultry were divided into four (4) groups due to their

Table 3. Type of enterprise and margin of value addition per unit product (livestock). n: 30.

Type of enterprise	(A) Value of product before processing (N)	(B) Cost of processing (N)	(C) Value of by-product (N)	(D) Value of product after processing (N)	(E) Value added per unit (N) (C+D)–(A+B)
Poultry processing					
(i)Spent layers	675/bird	50	65	800	140
(ii) Layers	950/bird	50	70	1100	170
(iii Broilers	775/bird	50	70	950	195
(iv)Cockerels	675/bird	50	65	800	140
Fish processing					
(i) Cat fish	600/kg	80	-	900	220

* Values used are means; Note: N153 = US$1Source: Computed from field data (2010).

Table 4. Type of enterprise and margin of value addition per unit product (vegetables). n: 30

Type of enterprise	(A) Value of product before processing (N)	(B) Cost of processing (N)	(C) Value of by-product (N)	(D) Value of product after processing (N)	(E) Value added per unit (N) (C+D)–(A+B)
Irrigation					
Tomato processing	8,000/bag	570	-	10,750	2,180
Pepper processing	11,600/bag	570	-	14,250	2,080
Hot pepper processing	16,000/bag	570	-	18,750	2,180

*Values used are means; note: N153= US$1 Source: Computed from field data (2010).

weights and demand by the buyers. The processing, from slaughter to roasting was conducted manually. The slaughtered chickens were put into a bowl of hot water for easy depluming. The birds were then opened from the ventral aspects with a single incision from the dorsal point of the clavicle to the cloica. The deplumed chickens were later transferred to a locally made roasting kiln.

Spices were applied on the birds and allowed to roast. Roasting was done at strategic positions by the road side which also served as markets. The by-products which include; the visceral, heads and the legs were sold to buyers who use same for soup. Fish processing was done using the traditional smoking kiln. The catfish was the favourite. Being slippery in nature, the fish were put into a bowl of warm water and washed to remove dirt and make it handy. These were then transferred to the smoking kiln with adequate heat to prepare the products. The smoked fish were packed in cartons of various sizes for sale at the local markets, and in some instances, moved to the southern parts of the country where it attracts higher prices.

Type of enterprise and margin of value addition per unit product (vegetables)

Table 4 shows the result of vegetable processing enterprises. Three (3) types of vegetable namely tomato (*Trichosanthus* spp), pepper (*Capsicum annum*) and hot pepper (*Capsicum frutescence*) were captured. The processing method adopted was sun drying. Hot pepper processing accounted for N2750 ranking as the highest. Pepper and tomato processing enterprises recorded N2650 and N2180, respectively; in descending order. The irrigation farmers were also the processors. All the three (3) species of vegetables were processed the same manner. Ripen fruits were collected, washed and the seeds removed. The opened fruits were dried by sunning on ordinary mats, large stones or leaves of trees spread on the ground.

Reported constraints to processing

The processors have been operating amidst several

Table 5. Constraints encountered by processors in the study area (n: 30).

Constraint	Frequency	Percentage of total
Inadequacy of markets for finished products	30	100.00
Exploitative tax by government agencies	25	83.33
Inadequate capacity for maintenance of machines and equipment	12	40.00
Inadequacy of capital for purchase of inputs	30	100.00

*****Multiple responses were recorded; Source: Computed from field data (2010).

problems which mainly include inadequacy of market for their processed products (100%). Where the markets are available, poor prices for products are experienced. As a result of this factor, the small-scale agribusiness entrepreneurs are compelled to sell on loan, a debt which later turns-out as bad debt. Similarly, processors reported excessive or rather exploitative tax collection from government officials (83.33%) ranging from operation permit to revenue on products. Other problems experienced are inadequate capacity for maintenance of machines and equipment (40.00%), as consequence some had stopped functioning. Finally, there was a general complaint of inadequacy of finance for purchase of inputs/raw materials for operations (100%), among the rural entrepreneurs. The results are shown in Table 5.

Limitations of the study

Due to time and financial constraints, the study was limited to the North-eastern zone of the State, instead of the whole communities of the zones. Similarly, the enterprises were restricted to six (6) for same reason, whereas agricultural commodities like sorghum, cowpea, millet, fruits (mangoes, oranges, e.t.c) milk, beef, mutton, among several others, were not captured. Further studies in this regard are absolutely required, in order to document a comprehensive report for the purpose of providing rural entrepreneurs with adequate information towards making appropriate plans for investment, and policy makers for improving rural enterprises.

CONCLUSION AND RECOMMENDATION

With all the constraints reported, it could be concluded that the prospects of value addition in the small-scale enterprises in the area evaluated can be said to be viable. This was more valid among the vegetable and grain processors than livestock. Based on the findings of this study, the processors will require verse capacity building in the area of maintenance of machines and equipment. Similarly, the aspect of post harvest processing and products marketing will be absolutely vital if the enterprises are to be kept in business.

Lastly, effective monitory structures for adherence to business ethics, and micro-finance linkages should be established for easy accessing by the processors in order for them to expand their businesses; and on a general note, the rural farmers should be encouraged to add value to their farm produce before marketing. This will improve their income generation towards paving way to a sustainable agricultural development in rural communities/developing countries.

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REFERENCES

Boland M (2009). What is Value-added Agriculture? http://www.agmrc.org/business_development/getting_prepared/value added_agriculture/articles/index.cfm.

Cowan T (2002**).** Value-Added Agricultural Enterprises in Rural Development Strategies. The US Congressional Research Service. Order Code RL31598, p. 42.

Dunlap A (2006). Checklist for Starting Value-Added Agriculture Enterprise. The Value-Added and Alternative Agriculture Start-Up Tool Kit. The NC State University Cooperative Extension. http://www.irs.org/business.

Daniel JD, Ja'far-Furo MR, Tashikalma AK, Ezekiel CS (2009**).** Economics of Cotton Production in Southern Parts of Adamawa State, Nigeria. Inter. J. Crop Sci., 1(1): 73-80.

Eboiyehi FA (2006). Work, Women Employment and Feminization of Poverty in Nigeria. Gender Behav., 4(1): 642-658.

Fodor E (2006). A Different Type of Gender Gap: How Women and Men Experience Poverty. East European Politics Societies. 20(1): 14-39.

Ja'afar-Furo MR (2006/2007). Resource-use Efficiency and Constraints to Animal Traction Technology in Adamawa State, Nigeria. Ann. Borno. 23(24): 127-144.

Joda A (2010). Women As Agents for Development As Agricultural Entrepreneurs in Adamawa State, Nigeria. A Paper Presented at the 24th Annual National Conference of the Farm Management Association of Nigeria (FAMAN). Held at Adamawa State University, Mubi. 11th-14th, October

Johnstonebk B (2005). Increasing Small-Scale Rural Maize Producers' Revenue by Promoting Maize Value Addition and Collective Marketing in Kyegegwa and Kyenjojo Districts of Western Uganda. hppt://www.arc.peacecorpsconnect.org/view/1468/increasing-small-scale-rural-maize-product. Accessed 26/10/2010

Nwosu NT (2008). Education for All Women by the Year 2015: Women

Centre for Continuing Education, Sokoto Nigeria as a Case Study. A Paper Presented at the International Conference Millennia 2015, "Women, Actors of Development for the Global Challenges". Organised by the Destree Institute and its Partners in the Liege Convention Centre, Belgium. 7th-8th, March. 19p

Omorodion FI (2007). Rural Women Experiences of Micro-Credit Schemes in Nigeria: A Case Study of Esan Women. J. Asian Afr. Stud., 42: 479-494.

Technical Assistant to the House of Representatives Committee on Agriculture, TAHRCA (2005). Promoting Value Adding in Nigerian Agriculture: The Cassava Industry Example. Policy Brief No. 3. 10p.

Silva G (2002). Value Added Agriculture. Michigan State University Extension Eaton County.

Starrels M, Bould S. Nicholas LJ (1994). The Feminization of Poverty in the United States: Gender, Race, Ethnicity and Family Factors. J. Fam. Iss., 15(4): 590-607.

Tijjani B (2009). Nigeria: Fadama Presentation – International CDD Conference, Beijing, China. October, 17th-19th.